A Comparative Study of Depreciation Accounting in Cement Industry in M.P.

(WITH SPECIAL REFERENCE OF A.C.C. LTD. AND PRISM CEMENT LTD.)

THESIS

Submitted to the
Bundelkhand University, Jhansi
for the Degree of

DOCTOR OF PHILOSOPHY
IN
COMMERCE

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1- That the thesis embodies the work of the candidate **Mr. Vishnu Kumar** titled ***"A Comparative Study of Depreciation Accounting in Cement Industry in M.P. (With Special Reference of A.C.C. Ltd. and Prism Cement Ltd.)***

2- That the candidate worked under me for the period required under ordinance.

3- That he has put the required attendances in faculty during the period.

4- I have approved this thesis for its representation before its evaluators.

Mahoba

Date: Feb 22, 2008

(Dr. B.L. Sharma)

PREFACE

Before independence depreciation was taken to be hypothetical cost and not an out of pocket cost by our business organization. These business organizations were of the opinion that depreciation was a process of allocation and not a process of valuation, but due to rising prices, now they are of the opinion that depreciation will be charge on replacement cost of fixed assets. Now every business organization will be charge on replacement cost of fixed assets. Now every business organization feels and realized that if such inflationary condition persist, It would be difficult for them to replace their fixed assets without additional funds, which can only be accumulated by charging depreciation on replacement cost. Also, the burden of income tax and other direct tax are were very heavy in recent year a business concern in normalcy not left with adequate saving for the replacement of its fixed assets in future. The replacement cost of all the fixed assets have increased sharply during the last two decades, owners of fixed assets have been favorly inclined in recent year to provide depreciation on replacement cost. In our country depreciation is all allowable expenditure, thus if we charge depreciation on replacement cost, the capital consumption will remain intact for capital formation in business organization.

In modern time of globalization depreciation accounting has its own significance in price fixation, price regulation, bonus determination, managerial commission, financing policy of banks and other business houses, insurance payments etc. These matter are correlated with depreciation, because without making a through study of depreciation accounting above decision cannot be taken on rational basis. Further more, for the last two decades our own government has been trying to finance business organization

to replace their old obsolete fixed assets. Our government for replacement of fixed assets has proposed many schemes and all these schemes are based on the study of depreciation accounting. No serious study seems to have been done in our country concerning the problem that arises out of depreciation particularly in the context of rising price thus not only empirical studies in the field of depreciation accounting lacking but it rather appears to be a neglected area of accounting.

Depreciation accounting has assumed greater significance particularly during 21st century due to various factors. The fore most amongst them is that depreciation now constitutes a sizeable portion of the production in view of the large-scale mechanization of production process of industries secondly, in view of rising cost of fixed assets a desiring involving replacement of fixed assets or expansion of existing plant and machinery can not be taken without taking into consideration the impact of depreciation.

Depreciation policy has to indicate as to what asset will be subject to charge of depreciation determination of residual value, determination of economic life of these fixed assets method of depreciation and rate of depreciation a modern business organization while formulating its depreciation policy should be guided by the accounting standard issued by the Institute Of Chartered Accountants Of India, the apex body in the field satisfy the well accepted operation criterion for financial management decision namely maximization of wealth. There fore, every improvement in depreciation policy should have maximization of owner's wealth as its basic objective. That is to say it should result in providing for adequate amount of profit so the sufficient provision is available to the available to the company at the end of useful life of assets.

In present time cement industry is one of the biggest and basic established industry of M.P. state. It stands in needs of rehabilitation and modernization since independence. Its fixed assets were old and out dated. Many units are closed due to old plant and machinery. One of the major reasons of this closer of mills may be the bad condition of there fixed assets and poor depreciation policy.

In view of above facts and reasons I have choose research work in this area. This research work is completed by collecting and analyzing the factual primary and secondary data regarding depreciation accounting of three selected cement manufacturing units in Madhya Pradesh state. The period of my study is taken from financial year 2000-01 to 2006-07.

My research topic is "A Comparative Study Of Depreciation Accounting In Cement Industry In M.P. (With Special Reference of ACC & Prism Cement)". The study of this area is divided in seven chapters. The first chapter deals with introduction. The second chapter describes history and development of cement industry. The third chapter discusses conceptual framework of depreciation accounting. The fourth chapter critically examines the depreciation policy in cement industry in Madhya Pradesh. The fifth chapter discusses depreciation accounting in actual practice. Sixth chapter examine with depreciation accounting and changing price level. Seventh chapter narrates the main findings and suggestions of my research.

I am heavily indebted to my supervisor Dr. B.L. Sharma and his wife Smt. Premlata Sharma who went through my pages very carefully and offered valuable suggestions. His belief in my capabilities and his constant encouragement and stress on doing quality research work that can be useful to the society kept the tempo alive in times of duress. He has been a constant source of encouragement. It has always been a great learning experience to

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listen to his valuable insight o n the subject, and his belief in the critical importance of simplicity of approach and focusing on the "Problems." It would be my good fortune if the present study satisfies even a fraction of his expectation.

I will be failing in my duty if I do not acknowledge with gratitude my indebted to Dr. D.C. Kanchan, Dr. D.C. Agrawal, Dr. M.S. Nigam, Dr. R.P. Saxena. (Reader Commerce Department, BundelKhand College) BundelKhand University, Jhansi, Dr. Rajesh Pandey, Dr. S.P. Singh (University of Allahabad.) and Dr. Manish Srivastava who not only inspired me but also gave me valuable suggestions from time to time.

Mere acknowledgement may not redeem the debt I owe for the potential blessing from by my father Shri Pradeep Kumar and mother Smt. Savitri Devi unless brought in noble deeds. During the initial phase of study the collection of literature on the subject and reliable data, which is critical to empirical studies such as the present one has been the most demanding task. The officers and staff of Prism Cement, ACC, Birla Corporation Ltd., Central Library, Gwalior (M.P.), Central Library, University of Allahabad and Central Library, Jaipur are to be thanked for the kind attention.

I am thankful to Mr. Akhilesh Kumar, Director of Nehru Youth Society, Mauranipur (Jhansi) and typist Mr. Anil Kumar who had taken pains to type this research thesis.

Place- Mahoba

Date 22.feb2008

(Vishnu Kumar)

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CHAPTER-1

Introduction:

Depreciation is the allocation of cost of a fixed asset to the periods that are expected to benefit from its use. It is the gradual conversion of the cost of a fixed asset into expense. The accounting profession requires that depreciation be charged on a "systematic" basis to each accounting period during the life of a fixed asset.[1] Therefore arbitrary assignment of the cost of a fixed asset to accounting period is not acceptable. It is necessary to charge depreciation even if the market value of a fixed asset has appreciated, because depreciation is a process of allocation, not valuation. Depreciation is allocated so as to charge a fair proportion of the depreciable amount in each accounting period during the expected useful life of the asset .A similar view is echoed in the International Accounting Standards (IAS NO. 4) issued by International Accounting Standards Committee 1976, accounting to which depreciation is defined as "The allocation is of depreciable amount of an asset over its estimated useful life. Depreciation for the accounting period is charged to income directly or indirectly. Depreciation is charged only on depreciable assets which are defined as assets."[2]

(a) Which are expected for the use during more than one accounting period.

(b) Have a limited useful life, and

(c) Are held by an enterprise for use in the production or supply of goods and services, for rental to others or for administrative purposes and not for

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1-The Institute of Chartered Accountants of India Accounting Standard 6 (Revised) Depreciation Accounting New Delhi, 1994.

2- Accounting and Auditing Standards, published by "The Institute of Chartered Accountants of India, New Delhi, Ed. 1990, page c-40.

the purpose of sale in ordinary course of business.

Deprecation accounting has assumed greater significance particularly during the 20th century due to various factors. The foremost amongst them is that depreciation now constitutes a sizeable portion of the cost production in view of the large-scale mechanization of production process of industries. Secondly, in view of rising cost of fixed assets a decision involving replacement of old fixed assets or expansion of existing plant and machinery cannot be taken without taking into consideration the impact of depreciation.

A sound pricing policy of a product cannot be evolving with out careful study of depreciation charge. In modern capital-intensive industries, depreciation charge as a percentage of total cost is as high as 15% to 20%, thus we find that depreciation accounting has emerged as an important area of study in the field of accounting. It would therefore, be necessary for every business organization to formulate its depreciation policy.

Depreciation policy has to indicate as to what asset will be subject to charge of depreciation, determination of residual value, determination of economic life of these fixed assets method of depreciation and rate of depreciation. A modern business organization while formulating its depreciation policy should be guided by the accounting standard issued by 'The Institute of Chartered Accountants of India', the apex body in the field of accounting in India. The depreciation policy likes, any other financial policy should satisfy the well-accepted operational criterion for financial management decision namely, maximization of owner's wealth.

Therefore, every improvement in depreciated policy should have maximization of owner's wealth as its basic objective. That is to say it should result in providing for adequate amount of profit so that sufficient provision is available to the company at the end of useful life of the asset.

Scanning of the existing literature regarding depreciation accounting in India reveals that the studies have centered round issues like historical cost. The replacement cost as a basis for charging depreciation, impact of tax consideration on depreciation accounting and practices and impact of price level changes on provision for depreciation. The present state of research in the area of depreciation accounting is best summed up by what W.A. Paton Has stated i.e. "There continues to be a great deal of sloppy thinking and careless description with respect to the subject of depreciation cost leading at times to serious misunderstanding and questionable policies."[1] In India no serious research effort seems to have been done to study, various Issues Involved in depreciation. The present study makes a modest attempt to fill up the gab in literature in the area of depreciation policy and accounting.

Meaning And Definitions: -

Now it is better to study meaning and definition of some important words relating to depreciation accounting.

Meaning of Depreciation: -

Depreciation is noting but an expense of a business just a

1.Paton W.A: " Modern Accounting" The Ronald Press co., N.Y.1994, Page 171.

wages, rent, cost of raw material consumed etc., but one unfortunate thing about depreciation is that it is not visible like other expenses till the very end. In the case of other expenses the expenditure is patent and known in amount with reasonable accuracy. When a depreciable asset is bought who can say as to how long it will last, how seen it will be displaced by some invention and even if in fact it does not last as long as expected. It does not mean this that provision for depreciation may not be accurate and thus net profit may not be valued in the books and stated in the balance sheet at its real worth.

For particular depreciable assets, objective verifiable value based upon external transactions are available at only two point of time i.e. at the moment of acquisition and at the moment of disposal. If the above two events occur within the same accounting year, no such thing arises as mentioned in the first paragraph. But in the case of depreciable assets these two events happened in two different financial years. Because of this reason the word "depreciation" is used in hundred and one senses in accounting and in business literature. Few most commonly meanings are given below: -

(i) Depreciation as fall value: -

When a person buys an asset such as a motor vehicle it depreciate by a stated amount as soon as he drives it out of the show room or as soon as it has been subjected to a very little use. Its fall in the price is not necessarily accompanied by any decrease in usefulness. This fall in value may be shown in the accounts as provision for depreciation.

(ii) Depreciation as physical detraction:

When a depreciable asset is put into use, it consumes its productive activity one by one. So this physical deterioration of depreciable asset may be made good by way of provision for depreciation.

(iii) Depreciation as Allocation of cost: -

Depreciable asset is nothing but only a prepaid cost say a fixed assets having life of 3 years and cost Rs.4500/- In this example Rs. 4500/- are paid cost that must be allocated in three years revenue account by way of depreciation.

(iv) Depreciation as to retain funds within the business to maintain The productive capacity of the company: -

During the course of the time the process have so changed that the provision based on actual cost has become insufficient for the replacement of fixed asset. The money needed for replacement over the historical cost would have to be found from other reserve of the cement company or by raising fresh capital.

Definitions: -

(1) Depreciation

(i) "Depreciation represents that part of the cost of a fixed asset which is finally put out use by him. Provision against this loss of capital is an integral cost of conducting the business during effective commercial life of the asset and is not dependent upon the amount of profit earned."

(ii) "Depreciation is nothing but difference between the original cost and the probable break-up value would reprise the loss to be suffered by the business on account of use of such assets and would have therefore to be equitable distribution over the estimated life of such asset."

(iii) "Depreciation may be defined as the permanent and continuing diminuend diminution in the quality, quantity or value of an asset."

(iv) "Depreciation is not disposition part of the profit but an expense with out which profit can never be earned."[1]

(v) " Lost usefulness, expired utility, the diminution of service yield from a fixed asset or a fixed assets group that can not or will not be restored by repairs or by replacement of parts caused by wear and tear from use, disuse poor maintenance ,obsolescence, progress of the art and inadequacy or unsuitability to the particularly enterprises is depreciation."

(vi) Committee on the terminology of The American Institute assets that, "..... A cost or other basis value is allocated to accounting periods by a rational and systematic method which, however does not attempt to relate the sum allocated to an accounting period to either the occurrences affecting the length, of the life or the changes in value of the property within the period."

(vii) "To the educated man on the street depreciation means a decrease in

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1. CF H.R. Hatfilf Accounting. Page 131.

the some sort of the value. In the accountants (and the tax collector) depreciation has nothing to do with any kind of value, but is the systematic writing off the cost an asset generally by means of method, which distributes the depreciation charges uniformly over the full estimated service life. "By Paul T. Norton Jr.

(viii) "Depreciation represents that part of the cost of a fixed asset to its owner which is not recoverable when the assets is finally put out of use by him i.e. which is not covered by its scrap value. Provision against this loss of capital is an integral cost of conducting the business during the effective commercial life of the assets and is not dependent up the amount of profit earned''. by The Institute Of Chartered Accounts In Australia.

(ix) "Depreciation is measure of the realization of the investment of fixed assets out of the revenue of the current year. As fixed assets distribute to the working capital their depreciation is a contributing towards working capital."

(x) "Depreciation is an accruing loss of value which begins with cost new and ends with scrap value of the end of the assets useful life."

(xi) "The day by day expiration in the service cost of a fixed asset is called depreciation.''

(xii) ''Depreciation is the accrued liability for the deferred or periodic renewals of plant."

(xiii) ".....to spread the cost of final renewals as uniformly as possible over the periods benefited so that we shall not deceive ourselves to losses and consequently as to profits."[1]

(xiv) "Depreciation is a loss in service value of plant not restored by current maintenance resulting form causes against which no insurance is carried such a wear and tear decay action of the element inadequacy obsolescence's changes in the art changes in the demand and requirement of public authorities."

(xv) "Depreciation may be defined as a diminution in the use value of an asset either through wear and tear as in the case of building plant and machinery etc. or through passage of time as in the case of lease, patent etc.''

(xvi) "Depreciation means fall in going concern or owner's cost value of wasting assets, computed on the basis of cost expired during the period of their use in seeking profits, increase of value or other advantage. Depreciation is a part of the cost of seeking profits, equal in importance or other revenue expenditure."[2]

(2) Depreciation for the year:

(i) Definition, which implies that depreciation for the year is a measure expressed in monetary terms of the physical deterioration or indeed of any thing that actually occurs with in the period, are unacceptable .the annual

1- **Humpheeye, A.C."discuse of the depreciation of public utility properties as affecting their valuation and fair return by J.W. Alvord proceedings American Society of Civil Engineers, Jan 1914.**
2- **P.D. Leaka 'Depreciation and Wasting Assets'. Page 1.**

charge in an allocation to the year of a proportionate part of total cost or loss estimated with reference to longer period."[1]

(ii) Depreciation for the year is the portion of the total charge under such a system that is allocated to the year. Although the allocation reasonable estimates may be properly taken into account occurrence during the year it is not intended to be a measurement of the effects of all such occurrences.[2]

(3) Ordinary or normal depreciation

Depreciation Caused by normal wear and tear, action of elements, ordinary obsolescence's and inadequacy is called ordinary depreciation.

(4) Extra-ordinary Deprecation:

Deprecation caused by unusual wear and tear, unexpected disintegration, unforeseen obsolescence and inadequacy. This is not accelerated deprecation.

(5) Accrued Depreciation:

(i) It refers to the total depreciation to data on fixed assets still in service.

(ii) Accrued depreciation represents the depreciation, which has taken place between the data of acquisition and the present data. Depreciation is Continuous but it is customary to record it only at the close of each accounting period and upon the disposition.

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1 The General of Accountancy, Dec 1943. Page 485
2. American Institute of Accounting Research Bulletin No 22 May, 1944.

***(6) Accreted Depreciation*:**

Depreciation at a larger than usual rate it is usually related to rapid cost recovers for tax purpose.

(7) Incomplete Depreciation:

Incomplete depreciation is the total amount of accrued or accumulated depreciation on a depreciation reasonable estimate may be for general classes.

(8)Complete Depreciation: `

When the service life of a depreciation asset terminates depreciation is complete.

(9) Average depreciation:

Average depreciation is the amount of the values decline for all assets of one group such as all machines in a company.

(10) Unit Depreciation:

Unit depreciation is the total amount of the value decline for one individual asset such as one machine.

(11) Observed Depreciation:

Observed depreciation is determined by physical inspection or appraisal of operating condition. It is an engineering term bearing no necessary relation to the accountant's concept of depreciation.

(12) Depreciation Reserve:

(i) "Depreciation reserve is a recognition of the liability of the undertaking to meet the loss due to depreciation when such a loss occurs". [1]

(ii) "..... set up a reserve which merely measures the utility's liability for depreciation which has accrued at the present time but which will be realized at some time in the future."[2]

(iii) "A depreciation reserve is an account in which there is periodically transferred from the operating income a sum known as depreciation. This account is commonly shown as a deduction from the proper fixed assets items."

(iv) ''The depreciation reserve is the deduction for depreciation from the original property accounts while the depreciation funds contains the asset accumulated to replace the accrued depreciation."

(13) Depreciation Fund: -

When money or marketable securities are set a side for the purpose of replacing or providing assistance in replacing depreciable assets, amount representing this fund is invested out side the business of the company.

(14) Provision for depreciation:

That portion of the cost or other basis of a fixed asset or fixed asset group charged against the operation of a accounting period.

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1. Erickson Halford, "Deprecation address delivered the before the convention of the cent." W.W. Association, Sept. 25, 1942.
2. Jirgal John "Accounting for Deprecation" abstract in Electric Railway journal Oct. 25,1919

(15) Depreciation stop date:

It is the estimated date at which the assets usefulness will have expired.

(16) Depreciation Base:

The recorded cost or other basis (appraised cost when recorded Original cost is not known of a fixed assets or a fixed asset group that is to be recovered through depreciation accountings. Replacement cost or historical cost is the generally accepted depreciation base.

(17) Net Book Value:

It refers to depreciated value.

(18) Depreciation accounting:

(i) Depreciation accounting is a system of accounting which aims at distributing to cost or other basis value of tangible capital assets less salvage (if any) over the estimated useful life of the unit (which may be a group of assets) in a systematic and rational manner. It is a process of allocation not of valuation" [1]

(ii) "The purpose of depreciation accounting is to allocate in a systematic manner, the costs of productive facilities over their useful life so as to measure periodic income as precisely as possible. A system, which relates periodic depreciation charge to the actual use of facilities or their economic usefulness, is probably batter for this purpose than one, which is related

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1.American Institute of Accounts- Accounting Research Bulletin No. 22 May. 1944.

only to the passage of time but in any event the charge must be systematic, objectively measured and on a consist and basis from year to year. [1]

(iii) "Depreciation accounting is the process of allocating the cost or other basis of measurement of the service rendered by items of plant and equipment to the products and used those service[2]

(iv) "Depreciation is nothing more not less than accounting method of equalizing the cost of replacing and retiring property over a long period of time in order to avoid distorting the operation and maintenance accounts in any relatively short period.[3]

(v) Depreciation accounting seeks to allocate that capital out -law to the accounting periods in which it is expected; it will contribute towards the earnings of revenue.

(v) Depreciation accounting is a mathematical process of distributing the cost of an asset over the various accounting periods in which it is deemed the asset will earn revenue depreciation is thus when so viewed merely part of the accounting procedure of the matching revenue.

(19) Replacement or Renewal:

(i) The substitution of one depreciable asset for another, especially of a new for an old.

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1. **The Journal of Accountancy, America, April , 1949.**
2. **Robert T. Sprouse a Maurise Moonitz. A thentative set o broad accounting principles for business enterprises.**
3. **Britton J.A. "Methods of calculating deprecation" Correspondence in the Electric Railway Journal, Nov. 7, 1917.**

(ii) Replacement is the amount, which would be required to purchase another asset of the same type to replace the existing one.

(20) Deferred Maintenance:

It refers to repairs and part replacement which are necessary to keep an asset in good operation, but which have not been made.

(21) Betterment:

An expenditure having the effect of expending the useful life of an existing fixed asset, increasing its normal rate of out-put lowering its unit cost operation or other adding to the worth of benefits it can yield.

(22) Service Life: -

The age of an asset at retirement, retirement means of removal of a fixed asset from service.

(23) Expectancy or expected life:

Expectancy of an asset still in service is the price of time from the price of time from the observation date to the date when it is forecast that the depreciable asset will be retired.

(24) Economical life:

The period during which a depreciable, asset is capable of veiling services to its owner. An asset may be retired before the end of its physical life due to obsolescence and inadequacy, which makes its service uneconomic to its owner.

(25) Portable Service Life:

The age of the asset plus expectancy is called probably service life.

(26) Average Service Life:

It is the arithmetic means of the service lives of a group of units.

(27) Service Capacity:

The number of service unit that a machine operation or plant can yield within a specified of time. It is also called productive capacity.

(28) Wear and Tear:

A factor of depreciation caused by ordinary use, disuse or lapse of time and action of elements.

(29) Mortality:

The tendency of an asset or class of assets of expels or depreciates through use of passage of time.

(30) Obsolescence:

(i) Obsolescence is a fall in the value of an asset as a result of the same being out dated or as a result of new in vent ions coming in to the market.

(ii) Obsolescence the process of becoming obsolete is caused by new inventions and change economic conditions. The effect of obsolesce is to render certain depreciable assets useless at a data price to the end of their normal useful life.

(iii) "Obsolescence may arise from changes in the art, shifting of business centers, loss of trade, Inadequacy, sup session, prohibitory laws and other,

this which apart from physical depreciation operate to cause plant elements or the plant as a whole suffer diminution in value [1]

(iv) Obsolescence indicates the decrease in the value of an asset because of improvements in technological progress, results from the passage of time simply because it depends the progress of society.

(v) "Obsolescence is the loss of usefulness occasioned by progress of the arts or by such other external causes as changed in consumer demand and legislation or regulation leading to the reduction of future progress. "

(vi) " A fixed assets that is decoded because there is no longer a demand for the product that it produces or because a newer machine can produce at little expenses or can produce a product of superior quality is said to be obsolete.

(31) Fluctuation:

It is nothing but a variation either upward or down words in the mark value of an asset brought through economy factors.

(ii) Fluctuation is variation in the market values of an asset, which may be more or less the cost price.

(32) Amortization:

(i) It means the gradual extinction of an asset or cost over the period of its benefit.

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1. United State Supreme Court, 1932.

(ii) It is the reduction in the value of intangible asset, which may be subject to amortization.

(33) Depletion:

(i) It refers to a demotion in quantity and value of an asset due to extraction e.g. A mine becomes gradually deplete as the coal is constantly extracted from it.

(ii) It is the reduction in the value of natural deposits and resources such as timber tracts, oil well and mines caused by their conversion in to salable product.

(iii) The reduction in the value of a natural resource resulting from its exhaustion is called depletion.

(iv) 'Depletion is the allocation of cost of natural reason to current and future periods based on the physical exhaustion of the resource in the process of production."

34. Appreciation is an increase in the value of an asset.

35. Extra Ordinary Obsolesces

"It is that kind of obsolesces resulting upon development of more economical methods of production frequently due to radical changes and lower costs and sometimes due to new legislation which may render the continued operation of the old assets unprofitable or impossible or sometimes due to changes in the economic condition."[1]

1. **Bothing, Journal of Accounting Vol.- 90.**

36.Inadequacy:

(i) It is a loss of usefulness brought by business change due to an alternation in the character rate or quantum of production.

(ii) "A fixed asset that is replaced because its capacity is insufficient to meet the demands of the business is said to be inadequate.''

(37) Accounting:

"Accounting is the language of commerce.....the language in which the history of a business is recorded, its operation are summarized, its financial condition is state and its budget Forecasts are expressed."[1]

(38) Lapsing Schedule:

It is a work sheet showing costs of individual fixed assets, depreciation charges balance to be charged in future, retirements and addition etc. This is used when straight-line method is followed .Its purpose is to provide the details of on annual or other periods. Provision for depreciation, write-off costs fully carp orated or of depreciated and UN depreciated costs of items disposed off, and verification of the balance accumulated depreciation expense at the end.

(39) Plant Register or ledger:

It is a systematic record of fixed asset or group of fixed assets providing basic information for the proper functioning of depreciation accounting.

1.H.V. Fiiney, "General Accounting New York, Practice...hall, Inc.

(40) Rate of Depreciation:

"It is a percentage, the application of which to depreciation base yields an amount of depreciation."

(41) Blanket Rate:

"It is the rate of depreciation that applied to cost of all the fixed asset of one kind."

(42) Block Account:

The usual collective name for the fixed assets of a concern is "Block Account." The various fixed slated at their original cost are referred to at "Total Block Expenditure'', "Gross Block Expenditure' or "Account". "Depreciated Block" means the original cost minus the total depreciation provided since acquisition of the various fixed assets.

(43) Fixed assets:

(i) Fixed assets are those of a permanent nature by mean of which the concern it carried on and which are held for the purpose of earning income and not for the purpose of resale.

(ii) Fixed assets are service assets held in the business for aiding production available for use during their estimate life. Fixed assets produce income indirectly through their use in operation .The amount invested in these assets is not realized all at once from the total sales of the financial year. The reason is obvious that fixed assets become out of use of the expiry of the accounting year. The amount, therefore realized gradually from each unit of sales made during the serviceable life of assets.

(iii) "Fixed assets are those acquired for the purpose of in the business with the object of earning revenue which is not intended for resale at a profit conversion into cash in the ordinary course of business.[1]

(iv) "Fixed assets are those properties, tangible or in tangible which the business has acquired for use in producing goods or furnishing services and which are not for re-sale so long they are serviceable."

(44) Fixed Tangible Assets:

The properties perceptible to the senses are having physical substance.

(45) Fixed Intangible Assets:

An asset is intangible if its value resides not in to physical properties of the asset itself, but in the rights who its possession confers upon its owner.

(46) Wasting Asset:

A Fixed asset has a limited useful life.

(47) Maintenance or repairs:

The expenses incurred with a view of keeping a fixed asset as merely passable up to its original efficiency.

(48) Differed maintenance:

The cost of restoration of a capital asset to its full productive capacity after damage, accident or prolonged use with out increase in the previous estimated service life or capacity. Delayed repairs measure by the out lay

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1. An Audit Practices, The Institute of Chartered Accountants of India, New Delhi, 1968, P. 13.

requires restoring a plant or individual asset to full operating office.

(49) Cost;

(i) "Cost means that which must be given in order to acquit or produce, affect some thing the price paid for a thing."[1]

(ii) "An expenditure or out lay of cash other property capital stock or services given in excharge."[2]

(50) The Economic Cost:

"It may be defined as applied exchangeable value minus interest on owner's capital."[3]

(51) Value: -

"Value a used in accounts signifies the amount at which an item is stated in accordance with the accounting principles related to that items."[4]

(52) Cost Value:

The value represented by the price ,which was paid for.

(53) *Book Value or Balance Sheet Value:*

"The amount of the cost of assets which remains be written off against revenue over the remainder at the expected life of these assets."[5]

1- **According to the shorter Oxford English Dictionary.**
2. **According to a dictionary for account.**
3. **P.D. Leake, "Depreciation and wasting assets."**
4. **The Committee on Terminology of the American Institute of Accounting**
5. **Accounting Research and Terminology Bulletins A.I.C.P.A. New York, 1961 Review and resume of accounting terminology bulletins, P.17**

(54) ***Scrap Value or Salvage value*:**

(i) The actual or estimated selling price as second - hand material or as junk or scrap of fixed assets at retirements less any cost, actual or estimated of dismantling or deposited. The salvage value is equal to the estimated resale value at the time of retirement minus any costs of removing the items of making the sales.

(ii) The scrap value is the value of the assets when realized in the best possible way after it has been worn.

(iii) The scrap value is the value of an asset at the time when the asset becomes useless and disposed off in the market.

(55) Going Concern Value:

The value of the fixed assets from the viewpoint of the earning power of the assets as a unit in the complex economic organization.

***(56) Realizable Value*:**

(i) The value, which will probably be recovered on a force sale or value, which the asset will fetch under the hammer.

(ii) The value that would be realized by the sale in open market on the valuation date of the asset in question.

(57) Replacement value:

(i) It is meant for that amount necessary at the moment of the valuation of the asset to by a similar asset and places it in the position of the asset valued.

(ii) The value in terms of the cost of another asset of the same or similar type, which is to be substituted for the existing asset.

(58) Market Value:

The value, which the asset will fetch if, sold in the open market.

(59) Income - Tax Value:

The value, which the departments of taxation place, upon or recognized for taxation purpose.

(60) User Cost:

Cost incurred or loss sustained on a fixed asset as the result of continuing it in service rather than deposing of it through sale or as scrap or giving it restricted use.

(61) Un-recovered cost:

The portion of original cost of fixed asset not recovered through the process of depreciation is called undercover cost.

(62) Depreciation Accounting:

Depreciation accounting is a system of accounting which aims at distributing cost of other basic value of fixed asset less salvage (It any) over the estimated useful life of fixed asset, (which may be a group of fixed asset) in systematic and rational manner. It is a process of allocation, not of valuation. The purpose of depreciating accounting is to all in a systematic manner the cost productive facilities over their useful life, so as to measure periodic income as precisely as possible.

"Depreciation accounting is the process of allocating the cost on the basic of measurement of the service rendered by items of plant and equipment to the products. In this sense depreciation is nothing more, nor did less, than accounting method, which seeks to allocate the capital outlay to the accounting periods in which it is except to contribute towards the earnings of revenue.

Depreciation accounting of the revised accounting standard (AS) 6,

The following is the text of the revised accounting standard (AS) 6, "Depreciation accounting" issued by the council of the institute of chartered accountants of India.

Introduction:

1. This statement deals with depreciation accounting and applies to all depreciable assets, except the following items to which special considerations apply:

(i) Forests, plantations and similar regenerative natural resources.

(ii) Wasting assets including expenditure on the exploration for and extraction of minerals, oils natural gas and similar non-regenerative resources;

(iii) Expenditure on research and development;

(iv) Goodwill;

(v) Live stock.

Above statement also does not apply to land unless it has a limited useful life for the enterprise.

2. Different accounting policies for depreciation are adopted by different enterprise. Disclosure of accounting policies for depreciation followed by an enterprise is necessary to appreciate the view presented in the financial statements of the enterprise.

Definitions:

The following terms are ued in this statements with the meanings specified.

1. Depreciation is a measure of the wearing out, consumption or other loss of value of a depreciable asset arising from use, defluxion of time or obsolescence through technology and market changes. Depreciation is allocated so as to charge a fair proportion of the depreciable amount in each accounting period during the expected useful life of the asset. Depreciation includes amortization of assets whose useful life is predetermined.

2. Depreciable assets are assets which-
   (i) are expected to be used during more than one accounting period;
   (ii) have a limited useful life; and
   (iii) are hold by an enterprise for use in the production or supply of goods and services, for rental to others, or for administrative purposes and not for the purpose of sale in the ordinary course of business.

3. Useful life is either (i) the period over which a depreciable asset expected to be used by enterprise; or (ii) the number of production or similar units expected to be obtained from the use of the asset by the enterprise.

4. Depreciable amount of a depreciable asset is its historical cost, or other amount substituted for historical cost in the financial statements, less the estimated residual value.

Explanation

1. Depreciation has a significant effect in determining and presenting the financial position and results of operations of an enterprise. Depreciation is charged in each accounting period by reference to the extent of the depreciable amount, irrespective of an increase in the market value of the assets.

2. Assessment of depreciation and the amount to be charged in respect thereof in an accounting period are usually based on the following three factors:

(i) Historical cost or other amount substituted for the historical cost of the depreciable asset when the asset has been revalued.

(ii) Expected useful life of the depreciable asset; and

(iii) Estimated residual value of the depreciable asset.

3. Historical cost of a depreciable asset represents its money outlay or its equivalent in connection with its acquisition, installation and commissioning as well as for additions to or improvement thereof. The historical cost of a depreciable asset may undergo subsequent changes arising as a result of increase or decrease in long term liability on account of exchange fluctuations, price adjustments, changes in duties or similar factors.

4. The useful life of a depreciable asset is shorter than its physical life and is:

(i) Predetermined by legal or contractual limits, such as the expiry dates of related leases;

(ii) Directly governed by extraction or consumption;

(iii) Dependent on the extent of use and physical deterioration on account of wear and tear which again depends on operational factors, such as, the number of shifts for which the asset is to be used, repair and maintenance policy of the enterprise etc; and

(iv) Reduced by obsolescence arising from such factors as :

a. Technological changes;

b. Improvement in production methods;

c. Changes in market demand for the product or service output of the asset; or

d. Legal or other restrictions.

5. Determining of the useful life of a depreciable asset is a matter of estimation and is normally based on various factors including experience with similar types of assets. Such estimation is more difficult for an asset using new technology or used in the production of a new product or in the provision of a new service but is nevertheless required on some reasonable basis.

6. Any addition or extension to an existing asset which is of a capital nature and which becomes an integral part of the existing asset is depreciable over the remaining useful life of that asset. As a practical measure, however, depreciation is sometimes provided such addition or extension at the rate, which is applied, to an existing asset. Any addition or extension which retains a separate identify and is capable of being used after the existing asset is

disposed of, is depreciated independently on the basis of an estimate of its own useful life.

7. Determination of residual value of an asset is normally a difficult as nil. On the contrary, if the residual value is likely to be significant, it is estimated at the time of acquisition/installation, or at the time of subsequent revaluation of the asset. One of the bases for determining the residual value would be the realizable value of similar assets. Which have reached the end of their useful lives and have operated under conditions similar to those in which the asset will be used.

8. The quantum of depreciable to be provided in an accounting period involves the exercise of judgment by management in the light of technical, commercial, accounting and legal requirements and accordingly may need periodical review. If it considered that the original estimate of useful life of an asset requires any revision, the un-amortized depreciable amount of the asset is charged revenue over the revised remaining useful life.

9. There are several methods of allocating depreciation over the useful life of the assets. Those most commonly employed in industrial and commercial enterprises are the straight-line method. The management of a business selects the most appropriate method (s) based on various important factor e.g., (i) type of asset, (ii) the nature of the use of such asset and (iii) circumstances prevailing in the business. A combination of more than one method is sometimes used. In respect of depreciable assets, which do not have material value, depreciation is often allocated fully in the accounting period , which are acquired.

10. The statue governing an enterprise may provide the basis for computation of the depreciation. For example, the Companies' Act, 1956 lays down the rates of depreciation in respect of various assets. Where the management's estimate of the useful life of an asset of the enterprise is shorter than that envisaged under the provisions of the relevant statue. The depreciation provision is appropriately computed by applying a higher rate. If the management's estimate of the useful life of the asset is longer than that envisaged under the statue, depreciation rate lower than that envisaged by the statue can be applied only in accordance with requirements of the statute.

11. Where depreciable assets are disposed of, discarded, demolished or destroyed, the net surplus or deficiency, if disclosed separately.

12. The method of depreciation is applied consistently to provide comparability of the results of the operations of the enterprise from period to period. A change from one method of providing depreciation to another is made only if the adoption of the new method is required by statue or for compliance with an accounting standard or if it is considered that the change would result in a more appropriate preparation or presentation of the financial statements of the enterprise. When such a change in the method of depreciation is made, depreciation is recalculated in accordance with the new method from the date of the asset coming into use. The deficiency or surplus arising from retrospective re-computation of depreciation in accordance with the new method is adjusted in the accounts in the year in which the method of depreciation is changed. In case the change in the method results in deficiency in depreciation in respect of past years, the deficiency is charged in the statement of profit and loss. In case the change in the method results in surplus, the surplus is credited to the statement of profit and loss. Such a change is

treated as a change in accounting policy and its effect is quantified and disclosed.

13. Where the historical cost of an has undergone a change due to circumstances specified in Para 6 above, the depreciation on the revised unamortised depreciable amount is provided prospectively over the residual useful life of the asset.

Disclosure

1. The depreciation methods used, the total depreciation for the period for each class of assets, the gross amount of each class of depreciable assets and the related accumulated depreciation are disclosed in the financial statements along with the disclosure of other accounting policies. The depreciation rates or the useful lives of the assets are disclosed only if they are different from the principal rates specified in the statute governing the enterprise.

2. In case the depreciable assets are revalued, the provision for depreciation is based on the revalued amount on the estimate of the remaining useful life of such assets. In case the revaluation has a material effect on the amount of depreciation, the same is disclosed separately in the year in which revaluation is carried out.

3. A change in the method of depreciation is treated as a change in an accounting policy and is disclosed accordingly.

Accounting Standard

1. The depreciable amount of a depreciable asset should be allocated on a systematic basis to each accounting period during the useful life of the asset.

2. The depreciation method selected should be applied consistently from period to period. A change from one method of providing depreciation to another should be made only if the adoption of the new method is required by statute or compliance with an accounting standard or if it is considered that the change would result in a more appropriate preparation or presentation of the financial statements of the enterprise. When such a change in the method of depreciation is made, depreciation should be recalculated in accordance with the new method from the date of the asset coming into use.

The deficiency or surplus arising from retrospective re-computation of depreciation in accordance with the new method should be adjusted in the accounts in the year in which the method of depreciation is changed. In case the change in the method results in deficiency in depreciation in respect of past years, the deficiency should be charged in the statement of profit and loss. In case the change in the method results in surplus, the surplus should be credited to the statement of profit and loss. Such a change should be treated as a change in accounting policy and its effect should be quantified and disclosed.

3. The useful life of a depreciable asset should be estimated after considering the following factors:

(i) Expected physical wear and tear;

(ii) Obsolescence;

(iii) Legal or other limits on the use of the asset.

4. The useful lives of major depreciable assets or classes of depreciable assets may be reviewed periodically. Where there is revision of the estimated useful life of an asset, the unamortised useful life of an asset, the unmerited depreciable amount should be charged over the revised remaining useful life.

5. Any addition or extension, which becomes an integral part of the existing asset, should be depreciated over the remaining useful of that asset. The depreciation on such addition or extension retains a separate identify and is capable of being used after the existing asset is disposed of, depreciation should be provided independently on the basis of an estimate of its own useful life.

6. Where the historical cost of a depreciable asset has undergone a change due to increase or decrease in long term liability on account of exchange fluctuations, price adjustments, changes in duties or similar factors, the depreciation on the revised unmerited depreciable amount should be provided prospectively over the residential useful life of the asset

7. Where the depreciable assets are revalued, the provision for depreciation should be based on the revalued amount and on the estimate of the remaining useful lives of such assets. In case the revaluation has a material effect on the amount of depreciation, they should be disclosed separately in the year in which revaluation is carried out.

8. If any depreciable asset is disposed of, discarded, demolished or destroyed, the net surplus or deficiency, if material should be disclosed separately.

9. The following information should be amount substituted for historical statements.:

(v) The historical cost or other amount substituted for historical cost of each class of depreciable assets.

(vi) Total depreciation for the period for each class of assets; and

(vii) The related accumulated depreciation.

10. The following information should also be disclosed in the financial statements along with the disclosure of other accounting policies:

(i) Depreciation methods used; and

(ii) Depreciation rates or the useful lives of the assets if they are different from the principal rates specified in the statute governing the enterprise.

Accounting for fixed asset

The following is the text of the Accounting Standard 10 (AS 10) issued by the Institute of Chartered Accountants of India on accounting for fixed assets:

In the initial years, this accounting standard will be recommendatory in character. During this, companies listed on a recognized stock exchange and other large commercial, industrial and business enterprises in the public and private sectors

Historical Back Ground of Depreciation: -

Indians had developed concept of depreciation accounting even several centuries before Christ. In our religious book like "**Shrimada Bhagwat Geeta**" the Principle of depreciation is well established. **Lord krishna** said that even their go to ends[1]. In **Manu-Smiriti,** same thing was written-division English accountant in the year in the early history of accounting; Businessmen thought that depreciation was hypothetical cost and not an out of pocket cost. They tended to view depreciation expense as a matter of setting aside something during prosperous period to replace depreciable assets. When earning of the company was high a large sum was set-aside by way of deprecation expenses. When earning of the company were low or non-existent, nothing was charged by way of depreciation expenses. The importance of providing depreciation was thus not over-looked by accountant in the Past.

In India, depreciation was allowed as deduction in computing profits or gains from business or profession for the first time under Income Tax Act, 1886. In U.K it was allow under the Income Tax Low in 1878, U.S.A was a bit late to allow it as expense in 1913.

However, when depreciation was allowed as an admissible expense under the income tax law, businessmen, with a view to reducing the burden of tax on their net income, started charging as much depreciation as an expense as they could possible do. Now there seems to be a complete

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1. Jaidayal Goyanlaka: Translater, Srimad Bhagvatgita Tatva Vivachhi, published by Gita Press Gorakhpur, P.O Gita Press, Samvat, 2030.

unanimity all over the world that like wages paid to labour or cost of raw materials, depreciation is an element of cost.

As such whether revenue is sufficient or not depreciation as an item of expenses included. In the Cost of structure of a product and thus charged to profit and loss account. It has been increasingly recognized after the Second World War that a provision for depreciation must be treated as a charge on profit and loss account for the replacement of a depreciable asset within its lifetime. Before Second World War, accountant's considered depreciation as a progress of allocation and not as process at valuation but due to rising prices, accountants think better to charge depreciation on its replacement cost. Since costs of almost all the depreciable assets have increased sharply during the last 3 decades, businessmen have been favorably inclined in the recent years to charge depreciation on the replacement cost of there fixed assets.

However, from the accounting standards point of view depreciation is process of allocation and not of valuation. Therefore, it depreciation is charged in financial accounts on replacement cost of an assets; the amount at depreciation charged would vary from company to company and from year to year. Consequently, inter firm comparison would not be possible and also comparison of net profit for one period with that of another would show verifying results. In view of these fact government regulations on the subject directs that depreciation should be charged as an expense on the historical cost of depreciable assets.

Objectives of Providing Depreciation In Financial Accounts: -

The subject at depreciation has hitherto to received so little systematic attention by accountants, for it represents a large and regular recurring part of economic cost, and it is impossible to determine the profit and loss resulting in a given period by any business organization without first ascertaining the economic cost incurred during the accounting period in the form of depreciation.

1. Provision for depreciation is necessary to as certain true profit or loss for specific accounting year. Because a fixed assets is purchase for being used in the business to earn profit, and it is consumed by the fixed asset losses, its value when it is used and such a decrease in value must be debited to profit and loss account of the business organization before divisible profits are arrived at. The consumption of the fixed asset must be provided for out of the profits of every year during the life of fixed assets.

2. Provision for depreciation should reflect the cost of benefit, which the current accounting period receives from the use of fixed assets in the business.

3. Provision for the depreciation should result in carrying forward as an asset at the end at the current period only that part of the original cost which correspondence to service benefits expected from the assets in the future accounting periods.

4. The necessity of providing depreciation is to keep the fixed assets intact by distributing the loss in the value of fixed assets over number of accounting years, when it is in use. The cost of the goods, raw materials, wages overheads and the cost of machine, which has been used during the course of manufacture, will have to be taken into consideration. If we do not add cost of machinery i.e. depreciation which has been used to manufacture goods, it will not be possible for us to purchase new machinery when present machinery lasts. It is the way to keep capital of business intact.

5. Provision for depreciation is necessary to ensure that there is a charge to revenue of an amount estimated to represent as closely as possible the service rendered by the fixed assets in the production at income having regard to what the fixed asset originally cost in monetary terms.

6. Provision for depreciation is necessary to spread the expenditure incurred in acquiring fixed assets over their effective life and thus to ensure that in each accounting period, the revenue at which benefits their use bears an equitable proportion at their cost.

7. The criterion of success at a business organization is its profits. As such charging depreciation against its revenue is at primary significance. The need for arriving at actual cast of products makes it imperative that depreciation must be including in those costs. Therefore in final analysis Periodic cost or per unit cost at a product is the most important aspect at the record keeping of fixed assets.

8. If depreciation is not provided for the fixed asset will be over-valued in the balance sheet of business organization the profit will be over- stated in the profit and loss account which will turn not represent a true and fair view of the state at affairs of the organization as required by companies act.

9. There is some legal support for the contention that divisible profits of a company cannot be ascertained unless an allowance is made for depreciation. Section 205 of the Companies Act, 1956 has made it compulsory for companies before declaring dividends to provide for not only the current year depreciation but also for all past arrears of depreciation in respect at any financial year falling after 27th December, 1960.

10. The Indian Companies Act provides that dividend must be paid only out of profits earned by the company and never out at capital subscribed. This is a sensible rule because its main objective is to prevent manipulation of share values of the company by the declaration of dividend in excess of capital actual earnings.

11. Depreciation is also necessary to enhance a business organization money value of revenue earnings capacity over a period of year to "Plough back" Profits saves and invest.

Significance Of Depreciation Accounting In Indian Condition:

In every developing country including India significance of evolving a uniform system of Depreciation accounting due to rapid Industrialization is being increasingly felt, because techniques of production

due to technological innovations and changing choices and Preferences of consumers have in turn affected the method and amount at depreciation. Now management of business organization feel that depreciation accounting is not a matter of convenience but it is a significance charge against profit and loss account of a specific year. It is suggested in the interest of business organization to develop its own system at depreciation accounting.

Before Independence depreciation was taken to be hypothetical cost and not an out of pocket cost by our business organization. These business organizations were of the opinion that depreciation was a process of allocation and not a process of valuation, but due to rising prices, now, there are of the opinion that depreciation will be charge on replacement cost of fixed assets. Now, every business organization feels and realizes that if such inflationary conditions. Persist, it would be difficult for them to replace there fixed assets without additional funds, which can only be accumulated by charging depreciation on replacement cost. Also, the burden of income tax and other direct taxes are very heavy in recent years a business house is normally not left with adequate savings for the replacement of its also fixed assets in future. The replacement cost of all the fixed assets have increased sharply during the last two decades, owners of fixed assets have been favorably Inclined in recent years to provide depreciation on replacement cost. In our country depreciation is allowable expenditure, thus if we charge depreciation on replacement cost, the capital consumption will remain intact for capital formation in business organization.

In modern time depreciation accounting has its own significance in price fixation, price regulation, bonus determination

managerial commission, financing policy of banks and other organization Insurance payments etc. these matters are co-related with depreciation, because without making a through study depreciation accounting above decisions can not be taken on rational basis. Further more, for the last two decades our own government has been trying to finance business Organizations to replace their old and obsolete fixed assets. Many schemes have been prepared by our government for replacement at fixed and all these schemes are based on the study of depreciation accounting.

Since 1980 both the private and public sector business houses have to face the challenge of increasing price of replacement of fixed assets. Private and public sector business houses can take rational decisions regard in wage policy, price policy, dividend policy, retained earning policy, replacement policy, bonus policy etc. only after it has adopted a proper and sound depreciation accounting in their organizations.

In our country, no serious attempts seem to have been made so for either to formulate a clear concept of depreciation accounting or to collect empirical data on depreciation accounting. Following committees have some suggestions on depreciation accounting:

(1) The Taxation Enquiry Commission, 1953-54.
(2) The Direct Taxes Administration Enquiry Committee, 1958-59.
(3) The Ehoothalingam Committee, 1968.
(4) The Direct Taxes Enquiry committee, 1972.
(5) The Direct Tax Law Committee, 1980.
(6) Committee for Direct Tax Code, 1989.

Above committees recommendations are related to method of depreciation and other important aspects- Indian universities cover in their recommendations. Indian universities cover in their syllabus only definition and old methods of depreciation. The result is that the text because of accountancy prescribed for various examinations in this country are also confined to above limitations and no other aspects are dealt properly. Dr. G.D. Roy, Dr. L.S. Parwal, Dr. N.K. Khandwal, Dr. N.K. Sharma and Dr. A.K. Gurg, do some work on personal level but government and society till today do not recognize their work. No serious study seems to have been little to make in our country concerning the problems that arise out of depreciation particularly in the context of raising prices. Thus not only empirical studies in the field of depreciation accounting lacking but it rather appear to be a neglected area of accountancy. Present study is an attempt to show a critical theoretical framework of depreciation accounting and detailed examination of the depreciation accounting actual practice in depreciation accounting in cement industry in Madhya Pradesh.

Reason for selecting Cement Industry of Madhya Pradesh as a subject matter of this Study:

We are living in an economy of high technology and latest fashion. Cement is the key raw material in construction industry in the word. There is word wide competition in cement, thus it is must for us to have plant and machinery of latest fashion and technology to complete in national and International market. A proper understanding of the nature, functions, objectives and limitations of depreciation accounting of cement

industry of Madhya Pradesh and a knowledge of actual practices in vague for charging depreciation on fixed assets and making provision for the Government as well as public. It is the general felling among the management of cement Industry that estimates of depreciation on hunches and guesses would be in accurate. Today cement industry is a basic intensive, committed to rapid growth in the years to come. Its capital intensive character is well reflected in the fact that fixed assets constitutes a substantial part of total assets. Depreciation charges are significant factor affecting cost, prices, profitability and retained earning of cement industry of Madhya Pradesh. If we consider the relation of depreciation to sales revenue and reported earnings, the significant role of depreciation accounting in this industry is readily realized.

The price of cement plays a significant role in price structure of Indian economy. This Industry occupies a pride of place in the whole economy of Madhya Pradesh state, since depreciation charges constitutes a sizeable portion of cement prices, a critical evaluation of depreciation accounting followed by the industry assume considerable importance from the view point of the over all economy of Madhya Pradesh.

The funds retained through depreciation expenses play a vital role in providing internal finance to cement industry. Therefore, proper computation of depreciation charges, proper utilization of funds retained through it deserves special attention in cement industry. The technological innovations introduced in this Industry and changing habits, fashions and tastes have increased the incidence of obsolescence. Obviously the in dust will have to undertake replacement and modernization scheme if it has to

stay in the national and international market. As such increasing cost of replacement of fixed assets creates a distinct problem for financial managers. The development of technologies in the field of cement manufacturing process increases the incidence of obsolescence in fixed assets of this Industry. The development of new processes will make the old plant obsolete much earlier than its estimates service life.

Depreciation is a relatively important element of operating cost of cement. It covers 30 percent part of its cost, if calculated on replacement cost basis and if past operating cost are the basis for future business decisions, it becomes necessary that during a given period depreciation on fixed assets being a charge on profit should be debit to profit and lass account to arrive at a true amount of net profit to show a true and correct view of the state and correct view of the state of affairs of cement company on a given date. Further, since fixed assets represent a fairly large share of a cement industry's capital employed, gradual diminution in the gross value of such assets must be clearly disclosed. If provision for depreciation on fixed assets is made, capital remain intact, as the loss arising from shrinking in the value of fixed assets would be made good from remains.

The increasing replacement and obsolescence cost have produced a substantial demand that some adjustment in depreciation charges should be made to compensate increasing cost of replacement of fixed asset. Rapid scientific and technological development have also increased the possibilities of obsolescence of fixed assets and this fact can increase the importance of depreciation accounting in cement industry of Madhya Pradesh.

The significance of depreciation accounting in cement industry of Madhya Pradesh can hardly be overlooked, when decision relating to the following are required to be taken by management of cement Unit:-

(1) Dividend,

(2) Purchases of new plant machinery and other fixed assets.

(3) Calculation of income tax payable by cement units,

(4) For price fixation;

(5) Valuation of fixed assets for wealth tax and other property taxes;

(6) For taking investment decisions,

(7) For replacement of fixed assets,

(8) For taking repair and maintenance decisions,

(9) Tax policy; and

(10) Fiscal policy

In the present social economic setup, cement is as essential as food grain items. Thus a proper understand of the nature, functions, objectives and methods of depreciation accounting is primarily important.

Object of the study: -

The object of the present work is to study an analysis polices and practices in relation to depreciation & fixed assets Management in Company sector of M.P. with specific reference to A.C.C. Ltd. and Prism cement Ltd. More specifically, My study focuses on the following aspects or questions:-

1- Do the A.C.C. Ltd. and Prism cement Ltd in Madhya Pradesh follow liberal policy regarding depreciation?

2- Do the A.C.C. Ltd. and Prism cement Ltd in Madhya Pradesh follow uniform basis for charging depreciation?

3- What is the objective of depreciation policy as perceived by company manager of A.C.C. Ltd and Prism cement Ltd. in Madhya Pradesh?

4- Does the A.C.C. Ltd and Prism cement Ltd. in Madhya Pradesh follow the norms of this closers regarding depreciation accounting as suggested standard. No. 6 Issued by The Institute of Chartered Accounting of India?

5- Do the A.C.C. Ltd and Prism cement Ltd? In Madhya Pradesh state uniform method for charging depreciation both for the purposes of external reporting and taxation?

6- Find out what is this influence of depreciation policy on the profit, price of share in the market, company liquidity, amount of dividend and income tax.

7- What are the problems in the area of depreciation policy determination in A.C.C. Ltd. and Prism cement Ltd M.P.?

8- To estimate and examined to possibilities of future growth of A.C.C. Ltd and Prism cement Ltd. in M.P.?

9- To suggest a few pragmatic and useful steps for the possible improvement in the area of depreciation policy adopted by A.C.C. Ltd. and Prism cement Ltd. in M.P.?

10- Planning for fixed assets, service of life of fixed assets, replacement policy of fixed assets and record of depreciation and fixed assets.

Importance of the Study:

Depreciation policy is an important financial management decision because it influences the amount of net profit, price of shares in the market, company liquidity, amount of dividend to be declared, managerial remuneration, payment of bonus to workers and income tax. Study of depreciation policy & practices is of great importance for both the corporate world and the Government. The information generated through such a study would enable the company management to formulate the depreciation policy, which results in proper determination of the amount of depreciation to be charged to income and also raise adequate amount of fund for replacement of the old assets. Besides, the amount of depreciation charges is yield as a source of fund for the cement company and can be taken into account in determining the amount of company liquidity. The later is directly related to investment programme of the cement companies.

To the Government, such a study is important because it requires the information so generated for formulating its taxation policy in regarded to depreciation. It assumes significance because amount of depreciation allowed as a deductible expenditure under the tax laws has an important bearing on the growth potential of the corporate sector in Madhya Pradesh. Such a policy would also help in planning for the economic development of the state of which corporate sector is very important component. Beside, the fast technological development and scientific advancement make, it imperative for The Government to have pragmatic policy regarding depreciation for determination of tax base for the economy of state. The Government can also use this as a tool to contain inflation; to

revive depressed economy and to direct capital investment in specific industries or specific geographical area to achieve the desired rate of growth in the economy in general and investment in specific industry.

Depreciation Accounting and Availability of Capital Fund: -

The use of the terms like "provision for depreciation" or "Reserve for depreciation" in accounting statements and reports has made the readers to believe that depreciation accounting provides funds. However, depreciation charged in accounts simply recognizes the fact that existing assets has lost a portion of its service ability through use, disuse, and obsolescence, Inadequacy. It recovers a fairly estimated part of the original cost representing the expired service ability, form current revenues. The creation of a depreciation reserve means, only that a book entry has been made, resulting in an expense deduction in the profit and loss account and a reduction in the asset carrying value from cost to a lower amount. Some people think that depreciation charges automatically provide founds, and all that is necessary to obtain more money to accrue more depreciation is a completely mistaken view.

Accounting is an important instrument of management, but is not sure that a concern will earn enough revenue to cover all its expenses. If the company does cover all its expenses in revenue it will receive back from customers the amount invested in the assets that are used up in the process. Funds are provided by sales of the product of a price not by accounting. So, however, depreciation has not direct relation to what becomes of the money

received from customers. There is no relation in the last that the flow of founds from customers can be increased merely by increasing the depreciation charges. Funds utilization is a fairly complex changed managerial attitude. Receipts from customers are used to pay current account as they fall due to pay wages, taxes etc. to pay inters on loans to reduce long term diet or acquire additional fixed assets. The company usually prefers to use for expansion, if possible, the cost that is not needed immediately in maintaining the current to levee of operations. When the old fixed assets must be retired the cash that represents recovery of investment in then may be tied-up in additional fixed assets, in expended inventory or accounts receivables.

Theoretical depreciation charges have been made from the installation of each item, the accumulation in the depreciation founds will always equal the amount of depreciation. But in actual practice it is not possible from the following reasons:

(1) The other assets accumulated during the life of the company were obtained through sales transactions, in which the company received cash or bill receivables,

(2) The other assets although originally received as or other liquid assets may now be in any from including new fixed assets,

(3) If the company is suffering losses the amount of other assets accumulated would be less than, because a loss would mean that assets received in sales transaction were less than the cost and expenses given up,

(4) If the company is earning profits and has not distributed dividend, the other assets may amount to more than, and

(5) The replacement of the old fixed assets, if they are to be replaced, may take more or less than that amount depending on price at time of replacement.

From the above discussion it is clear depreciation accounting does not in way represent accumulation of funds. In the words of, learned writer young A.A. In his article "Depreciation and rate control" quarterly journal of economics, February 1915."..... The existence of depreciation reserve does not insure the existence of a body of "Idle case" or easily convertible assets held against possible replacement needs, but it does make it certain that all needed replacement up to the amount of reserve may be made without either cutting into surplus or increasing the deficit for the year. In practice, the reserve for the depreciation of large and varied properties becomes much larger than can be "used" in this way for replacements and to this extent is "unnecessary" for replacement."

The A.T.A. committee on terminology [(Accounting Terminology) Bull. No. 1] has indicated that ..... a so-called reserve for bad debts or depreciation does not in itself involve retentions on holding of assets, identified on otherwise for and purpose. Its function is rather a part of process of measurement to indicate a diminution on decrease of in an asset due to specified use, nor is the suggested substitution of the term provision acceptable as an improvement because any provision must be

necessary and in the final analysis are made by the allocation or segregation of assets.

Funds for replacement may be provided only when case equivalent to replacement cost is invested outside the business is readily marketable securities or kept in some other liquid from. In actual practice this is really done, financing replacement of a fixed asset is essentially a problem of financial management. If operation is successful and dividends are not declared in excess of income and retained earning determined after depreciation. Only taken into capital account in maintained intact which means that value in some from is available to offset the estimated depreciation. So I conclude the depreciation tends to provide funds for the replacement of fixed assets is just "by the way" whether this is done or not depends upon the capabilities of the management their re-investment decision technological changes and the prospects of company and of the industry within which it is situated.

Approaches to Depreciation Problem:

There have been several distinct approaches to the solution of the depreciation, the main of them are given below:

(1) Economic Approach: -

The followers of this approach say that the value of a fixed asset at any point of time is simply the sum of its discounted future services including salvage if any. A fixed asset is a bundle of future services and its

value is the present value of these services determined by discounted such flow method. Fall in the present value of these services at the end of the particular financial year in comparison to the present value at the commencement of the particular financial year is a measure of depreciation.

(2) Amortization Cost Approach:

Depreciation is a portion of original cost of fixed asset after adjusting estimated scrap value over the estimated useful life of the asset in some systematic manner. It is the cost and not value that distributed.

(3) Engineering Concept:

Depreciation is a fall in the service ability of a fixed asset. A comparison between the serviceability of the particular asset at the end of the period and at the commencement of the period is a measure of depreciation.

(4) Valuation concept: -

According to this approach depreciation is considered as the balancing difference between cost and current value. In this method both positive and negative depreciation must be realized.

(5) Appraisal approach:

According to this approach difference in the value between an existing old asset and a hypothetical new asset is treated as depreciation. In this method and attempt is mode to determine appraisal depreciation.

(6) Accrued Renewals Approach:

This approach implies that a fixed asset exists is which being used up and that eventually the necessity will arise for renewing the fixed asset. Accordingly there must be periodical setting aside of funds in such a way that when the asset has no further use, funds will be available to meet the expenditure.

(7) Manufacturing Cost Approach:

According to this approach depreciation is only in relation to manufacturing cost of goods sold. it is concerned with manufacturing cost but the problem of adding the cost of assets to the total cost of the goods processed though the use of the asset. This approach is not concerned with further prices of the product go up or down.

(8) Replacement Cost Approach:

According to this method depreciation its the proportion of cost of the fixed asset.

(9) Service accepted expired approach;

According to this aqpproach depreciation should bear relationship to service expected and services expired today.

(10) Legal Approach:

According to legal approach the loss not restored by current maintenance, which is due to wear and tear, decay, and inadequacy and obsolesce is deemed as depreciation.

Difference between Depreciation and some related Terms: -

It is good for us if we see before going through detailed study of the subject difference between depreciation and some related terms, it will help us in understanding the subjects, and these are:

(1) Depreciation and fluctuation:

(A) Depreciation represents permanent shrinkage of value due to the causes of wear and tear while fluctuation is temporary rise or full in the market value of the asset due to the operation of the forces of demand and supply.

(B) Depreciation is concerned with book value which fluctuation refers to market value.

(C) Depreciation is related to fixed asset where as fluctuation refers to a floating asset.

(D) Depreciation is due to internal causes i.e. by constant use of an asset affecting its earning capacity while the fluctuation is due to external causes, which do not affect the earning capacity of the asset and hence such a change is ignored.

(E) Depreciation is a charge against the profit while fluctuation does not affect the profit and hence it is ignored.

(F) Depreciation always means decrease in the value of a fixed asset fluctuation may mean either increase or decrease in value of an asset.

(G) Depreciations is continuing while fluctuation is not continuing.

(ii) Depreciation and depletion:

(a) Depreciation is a matter of physical deterioration but depletion is a matter of reduction in quantity.

(b) Depreciation applies on those assets which human hands constructed and which loss utility over time but which can be replaced while depletion applies to resources, which are not replicable, by human being.

(c) Provision for depreciation is compulsory before distributing dividend while provision for depletion need not be necessary to determine the amount of dividends, which may legally be paid.

The Assets entitled for Depreciation:

It is a question of common interest whether a particular asset is entitled for depreciation or not. The answer is obvious that all fixed assets that are consumed in the business one by one or whose values lost year after or fixed assets are useful in earning the profit .now we can take some typical examples of fixed assets and try to assesses whether the particular asset is entitled for depreciation or not.

(1) Free-hold land:

Most of the accountants are of the view that land is not entitled for depreciation because its utility is not lost from year after year. But I am of the view that land may be entitled for depreciation because land is helpful in earning the profit without land profit is not earned in the same quantum

(2) Good will:

When company's profits are increasing value of the goodwill is also increasing but company earns profit with the help of good will so in my view provision for depreciation is made in the profitable years. When company is suffering losses, goodwill is capital loss that is not charged in profit and loss account.

Present Study and Methodology;

Selection of Topic;

Cement industry of Madhya Pradesh, which has been singed out for investigation in of present study is indeed the backbone of foreign exchange in Madhya Pradesh. A thick relationship has been found between the level of economic growth and the quantum of cement consumption in our country. Depreciation policy and accounting is crucial for success of cement industry of Madhya Pradesh. The adequacy of fixed assets together with their efficient handling, virtually determines the survival or extinction of cement industry Fixed assets are said to be the life blood and nerve center of our cement industry .In spite of such a great significance of Fixed Assets, their depreciation policy and accounting it is strange that so for it could not attract as much attention of the researches in India as it deserves. A brief review of the dispersed efforts at research in the field is attempted in the present study.

It is true that the cement industry in Madhya Pradesh has the highest capital employed ratio and this base of exports and foreign exchange

earners. But unfortunately due to certain reason its development has come to a stand still. It is presumed that the leading factor, which has been hampering and hindering the growth of the cement industry of Madhya Pradesh is mainly effective deprecation policy and accounting is planned in a proper way the cement industry of Madhya Pradesh may put back upon sound financial footing.

Scope of study and unit selected for the present study

The scope of present study is defined below in terms of units covered, concepts adopted and period under focus

Firstly, the study "Depreciation Accounting" covers the cement companies in MADHYA PRADESH. Following companies have been selected for the study:

S.L. No.	Name	Place
1-	Prism Cement	Mankahri (Satna)
2-	Birla Cement	Birla Nagar (Satna)
3-	A.C.C. cement	Kymore (Katni)

Secondly, the study, related to the financial year form **2000-01 to 2006-07**

Methodology:

For the purpose of this study primary and secondary data have been used. Primary data about practices and procedures of depreciation policy and accounting in the selected companies have been collected through correspondence question are with selected units. The information has been collected also through discussion with the executives, heading various units of A.C.C. Ltd. and Prism cement Ltd of M.P.

Secondary data published annual report of the A.C.C. Ltd. and Prism cement Ltd for the relevant periods have been used. Annual reports contain the result of past performance and are considered the most important reliable sources of financial data of Joint Stock Company. The data from these reports have been analyses.

The annual published report in corporate complete information in quantitative from about the past performance of a company, but the use of these report for analysis and interpretation is not without limitations.

Methodology includes various statistical tools & techniques such as ratio analysis Common-size analysis, Trend analysis Break-even Analysis fund flow analysis cash flow analysis. Chi-square test, Regression, Random-sampling and Correlation in various units of A.C.C. Ltd, Prism cement, and Birla Corporation.

The details treatment & case study forming the subject matter of the subsequent independent in the same way No. one tools in the

financial analysis will has Major the potential health & Risk of any other price, All the above method will have to be jointly associated to study the various fact at a concern in the sources at data published Annual report The A.C.C. Ltd., Prism Cement Ltd, Birla Corporation Ltd., The Reserve Bank of India monthly Bulleting-Kotharies, Economic & Industrial Guide, Bombay stock Exchange, Official Directory, Various News Papers & Journals to be used in my Study.

Hypothesis of the Study: -

The study has been persuaded to the following hypothesis with reference to A.C.C. Ltd and Prism cement Ltd of Madhya Pradesh.

1- That proper and sound depreciation policy and liquidity position of A.C.C. Ltd and Prism cement Ltd. in M.P.

2 - That proper depreciation policy and accounting volume of production and quality production.

3 - That external source of finance mainly loan from financial institutions.

4- Income Tax Act and Companies Act of our country are the important factors of depreciation policy and accounting of A.C.C. Ltd and Prism cement Ltd. of Madhya Pradesh .

5 - Cement industry in an agent of socio-economic change in Indian society in the field of construction of roads, buildings, and bridges etc.

Chapter – 2

History and Development of Cement Industry

- A historical over view of cement industry
- Post Independence growth
- Problem facing the cement companies
- Problem of cement industry in A CC Ltd and Prism Cement Ltd. in M.P. and their solution

CHAPTER-2

History and Development of Cement Industry

A historical overview of cement Industry

Cement is one of the important infrastructure industries, which contributes to the rapid economic growth of country. Cement is not only significant but necessary requirement of the rapid development of every country. In present Social set up cement is an essential as food grain items. Cement is treated as an essential item for construction industry. In our country Industry is among give oldest industries of our economy i.e., Cotton Textile Industry, Jute Industry, Cement Industry, Iron and Steel Industry and Paper Industry. The Production Systems of these industries are out dated and excess costly in comparison to cement industries of developed countries. Thus, a proper understanding of the nature, functions, objectives and method of various aspects of accounting is primarily important. The Indian Cement industry has come a long way since 1914. When the first cement plant was commission had with a production level at 1000 tons/annum.

Development of Cement Industry in India (1919-1925)

Before independence India was mainly dependent on imported cement. The manufacture of cement was started in Madras state (Now Tamilnadu state) as long back as 1904 by the south India industrial Ltd. The cement manufacture by this company was 30 tones per day.[1] This venture

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1. 50 Years of cement industry in India. P.7

failed but it provided a nucleus for the growth of the cement industry. Between 1912 and 1913 the Indian cement company Ltd. was established which produced about 1,000 tones of Portland cement in 1914.[1] This was the real foundation stone of the modern cement industry in India. In the next two years, two more plants were added, one at Katni (Madhya Pradesh) and the other at Lakheri (Rajasthan). The first world war gave a fillup to the infant industry and by 1918 the three plants together was able to produce about 85000 tones of cement per year.[2]

Between 1919 and 1924 six new plants were installed and the capacities of the existing three old plants were increased. Table no. 2.1 shows the name and place of installed units and installed capacity of these units. The total installed capacity in 1924 was about 5,59,800 tones, but actual production was almost half of that figure, [3] which was outstripping the demand. An unfortunate rate was amongst the companies started and it resulted in cutting down prices to such as extent that in it was sold even below production cost, which forced some companies in to liquidation. It was at this Juncture that the government of India intervened and referred the working of the cement Industry to the tariff Board in the month of April 1924.[4] The Protection of industry, Board emphasized the urgent need for co-operation among the existing units. This resulted, The Indian cement manufacturers Association came in existence in 1925. The main function of

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1. Ibid., P.5.

2- N.L. Hingorani, op. cit., P.16.

3 .N.L. Hingorani : Cement Industry in India, Unpublished Thesis, ...page. 14.

4. The Pre-Independence growth history of the industry is based on cement manufactures association, 1964.

this body was to regulate the cement prices. As a result of the efforts of the Cement Manufacturers Association, Cement price were regulated. But the regulating of cement prices could not of itself solve the problem. At that time cement was a relatively new building material and had to be popularized. Even engineers had to be persuaded and told of its potentialities. The production capacity of Cement Industry in India during 1919-1925 is given in table no. 2.1

Table No. 2.1

Development Of Cement Industry In India

(During 1919-1925) **(IN TONNES)**

S.N.	Units	Place	Capacity
1.	Dwarka Cement Co. Ltd.	Dwarka (Gujrat)	100000
2.	Sone Velley Portland	Japla (Bihar)	50000
3.	Jubbalpore Portland Cement Co. Ltd.	Jukhehi (M.P.)	60000
4.	Gwalior Cement Ltd.	Sanmor (M.P.)	40000
5.	Punjab Port land Cement Co. Ltd.	Wah(P.B.)	36000
6.	Central Cement Provinces Portland Cement Co. Ltd.	Kymore (M. P.)	100000

(Source: - V. Poddar, Cement Industry in India, P.3)

The Cement Manufacturers Association formed the Concrete Association of India in 1927 with the twin objects of educating the public

about the manifold uses of cement and popularizing Indian cement. The next step taken was to strength marketing arrangements and the cement marketing company of India Ltd. was formed in 1930 to promote the sale and distribution of cement at Regulated price. As a result of the efforts of the Concrete association of India Cement sales registered a remarkable increase. Many factories were expended and two new companies namely, Coimbutore Cement Company Ltd. was established, the former being in the Southern Zone of India. All these efforts resulted in the increase of annual production capacity to 10,89,000 tones of the end of the year 1934, whereas the actual production was 7,41,025 tones, about 68 percent of the rated capacity. Further expansion continued in the existing capacious resulting in a production capacity of 1488000 tones per annum by the year 1936 while actual production of cement in India was 9,68,382 tones during this year showing a rise of 73 percent over 1929.[1]

Period Of Mergers And Control Of Supplies (1936-1945)

With the rapid growth of the production capacity during the period 1926-1936 the industry appeared to have turned the corner, but the problem of consolidating the companies remained to be solved. With the formation of cement manufacturers association in 1925, the cement companies got an opportunity to discuss their common problems and find out solution. They came nearer to each other and with the pioneering efforts of Mr. F.E. Dinshaw (a great cement industrialist) ten out of the eleven then

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1. **V. Poddar,OP. CIT., P.5-6.**

the existing cement companies (except Sone Valley Portland cement company Ltd.) amalgamated in 1936 into a single Organization called the associated cement companies Ltd. The object of amalgamation defined as ".....not to attain a monopolistic position but to make and deliver cement as cheaply as possible.[1] Actually this amalgamation resulted in the maintain of quality and lowering the cost of production. As a result the industry become more efficient and self-reliant. With the amalgamation of ten companies the need for continuing the cement manufacturer's association was felt no more and was wound up .The Cement manufacturing Company of India Ltd. became The Subsidiary Company of Associated Cement Companies Ltd. from the year 1936.

The Associated Cement Company Ltd. was registered on August 1936 with the head quarter of its registered office at Bombay. The Authorized share capital of the company was Rs. 8 Crores, divided into equity shares of Rs. 100 each; it was increased, to Rs. 16 crores in the year 1951 and further to Rs. .30 Crores in the month of January 1956.[2] with the formation of this company the quantity of Cement is a building material also increased considerably. To, meet this rising demand of Cement The Dalmia Jain Group came into the area of cement production in 1937 by establishing three cement companies in India. One of them a company was Dalmia Cement Ltd., which owned three Cement units situated at different Places. The following table shows the details of the Cement factories established by Dalmia Jain Group during the year 1937.

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1. V. Poddar,OP. CIT., P.5-6.

2..Place ,siddons &gough :The investors India year book (orlent longemans Ltd.calculate),1963 ed.pp.281- 82.

Table No. 2.2

Cement factories established by Dalmia Jain group During the year, 1937

((In tones)

S.N	Units	Place	Annual Capacity
1.	Rohats Industries Ltd.	Dalminagar (Bihar)	150000
2.	Dalmia Dadri Cement Ltd.	Charkhi Dadri (Haryana	75000
3.	Dalmia Cement Ltd.	Dandot (Punjab)	75000
4.	Dalmia Cement Ltd.	Santi Nagar (Sind)	150000
5.	Dalmia Cement Ltd.	Dalmiapuram(Tamilnadu)	75000

Source: - **V. Poddar, Cement Industry in India, P.3**

With the establishment of the above factories two leading groups namely ACC Ltd. and Dalmia Jain Owned almost all the cement factories existing at that time. The fear of competition existed amongst the two group and in order to avoid the same, attempts were made to combine both the groups but without success. Mean while other entrepreneurs also enter the field of cement production for example the Assam-Bengal Cement Company Ltd. Established its factory at Chhatak (Bengal), and the Kalyanpur Lime and Cement Works Ltd. established its factory at Banjari (Bihar). The Mysore Iron and Steel Works also setup a cement factory at Bhadravati. This was the first Instance of State Enterprise in the history of cement production in India. The Andhra Cement Company Ltd was also incorporated to set-up a factory at Vijaywada (A.P).

The selling up of all the above factories proved to be an overdose in the direction of cement production and again the rate was started in 1938-1939 prices were once again reduced to uneconomic levels and in many cases, cement was sold at prices even below the cost of production. This time ACC Ltd., decided to close, and some unprofitable units, But the Period of rate war was a temporary phase as the Second World War started in 1939 and the demand for cement spurted for various project like construction of airfields and other defence requirements. The government for war purpose consumed more than 95 percent of the production and a very small percentage was left for public use. During the first work of July 1942, the government commanded the supply of Cement from all the factories by issuing an ordinance under defence of India rules. This Control Continued for 23 years up to December 31, 1965.

To meet the rising demand of cement during Second World War period ACC Ltd. established four new factories at Rohri (Sind), Surajpur (Punjab), Kistna (Andhra Pradesh) and Khaluri (Bihar) During 1945 the factories under ACC Ltd. Dalmia Jain Group and Other entrepreneurs produced about 1.7 million tonnes at Cement in India against the total rated capacity at 2.2 Million tonnes.

Birla Corporation Limited is the flagship company of the M.P. Birla group. Incorporated as Birla Jute Manufacturing Company Ltd in 1919, it was Mr. Madhav Prasad Birla who gave shape to it present forms. As chairman of the company, Sri Madhya Prasad Birla Transformed it from a manufacturer of jute Goods to a leading multi product Corporation with wide spread activities.

Post Independence Growth

The Post Independence years gave a new impacts us to the cement industry one at the most notable developments immediately after the independence was the first Indian Standard specification for Portland cement by the Indian Standards Institution (I.S.I.). Earlier, the specifications governing the quality of Portland cement were produced in India, Which lay down the British Standards Institution .The most important feature at the India Specification was that the permissible limit of Magneria content in cement was raised from 4 percent to 5 percent in line with the specification of most countries in the world. Further, as a result of the first specification many raw materials and by Products were found to be useful in cement manufacturing which otherwise would have gone wasted.

In 1951 for the first time, targets of cement production were planned as a part of a result during the first five year plan (1951-56) Cement production increased from 2.69 million tones to 4.60 million tones; by the end of the first plan there capacity at about 5 million tones. The second plan period (1956-61) witnessed further expansion of the cement industry. The total installed capacity increased to about 9.2 million tones, actual Production raised from 4.6 million tones to about 7.8 million tones and number of unit increased from 27 to 34. This period also saw the manufacture in India new types of cements including white cement and Portland blast furnace slag. Cement unlike in Pre-Independence years where production was out stripping the demand for cement, Post-Independence year's registered a sharp increase in the demand for cement reversing the demand supply passion in order to meet the increasing demand the targets of

annual capacity and production during the third plan period (1961-66) were subsequently stopped to 13.0 and 15.0 million tones respectively.

During the fourth five year plan (1969-74) the achievable target at production was projected at 18 million tones against which the actual production was 14.5 million tones for the year 1973-74 in 1976, 55 cement unit operating in the country had a total capacity at 21.23 million tones against which actual production was about 19 million tones in the year 1976-78 at the fifth plan 1.89 million tones addition capacity Was to be created bringing the total to 23.31 million tones. Seventh plan target installed capacity 60 million tones.

Prism Cement Ltd (PCL) was incorporated in 1992 in the name of Karan Cement. The company jointly promoted by Rajan Raheja Group of Mumbai, F.L. Smidth & Co, Denmark (FLS), a world leader in cement technology and Industrialization fund for developing Countries, Denmark (IFU). Later, the company was taken over by Rajan, a real estate developer. The company's name changed to Prism Cement Ltd (PCL) in 1994.

The company has 2.5 million tonne per annum cement plant at Satna, Madhya Pradesh, which is equipped with latest technology and has special features like a six-stage low-pressure drop pre-heater, bucket elevators for silo and kiln feeding, roller presses for cement grinding and electric packers for cement

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The company caters to the markets of Madhya Pradesh , Uttar Pradesh and Bihar. Moreover, Prism Cement Ltd (PCL) has installed 6 DG

sets with a total capacity of 31 MW, which is sufficient to meet the company's entire power requirement. The company markets its products under the brand name of Champion.

Though the best of our industry matches quite well with world standards in terms of energy (Thermal energy Kcal/kg of clinker-India 665 against 690 of Japan) and pollution norms (SPM of 40 in India against 20 of Japan) but the average performance of the Indian industry is lagging behind.

In the coming years, in order to survive and grow in the globalize market, rapid modernization and adoption of cost effective energy efficient and environment friendly technologies will be the prime mover for the viability of the industry in the global canvas. The industry should increasingly look for other cheaper fuel options like sludge from paper plants, Sugarcane trash, baggage, jute dust, textile dust, biogas refinery waste like pet coke etc. The industry should be known in future as savior of the country for sustainable development by consuming.

Latest Development

Till about a decade ago, the country was deficient in cement and it had to resort to import in order to fill up. The gap in supply the production at cement has increase from around 2.73 million tonnes in 1950-51 to over 69.31 millions in 1950-96, 1024 million tonnes in 2001-02 and 141.8 million tonnes in 2005-06. Industry recorded a growth of 12.4 percent in 1999-2000 11.2 percent during the financial year 2006 to 141.81 million tonnes by comparison production increased 8.6 percent during financial year 2005 and 5.5 percent during financial year 2004.

Production has increased at 8-year Compound annual growth rate (CAGR) at 8.4 percent. On decadal basis, India cement production increase at annual average at 8.2 percent during financial year 1996-2006 as compared with 6.9% during financial year 1986-96 the latest India's Cement Production and Growth is given in table No. 2.3

Table No. 2.3

The Latest India's Cement Production and Growth

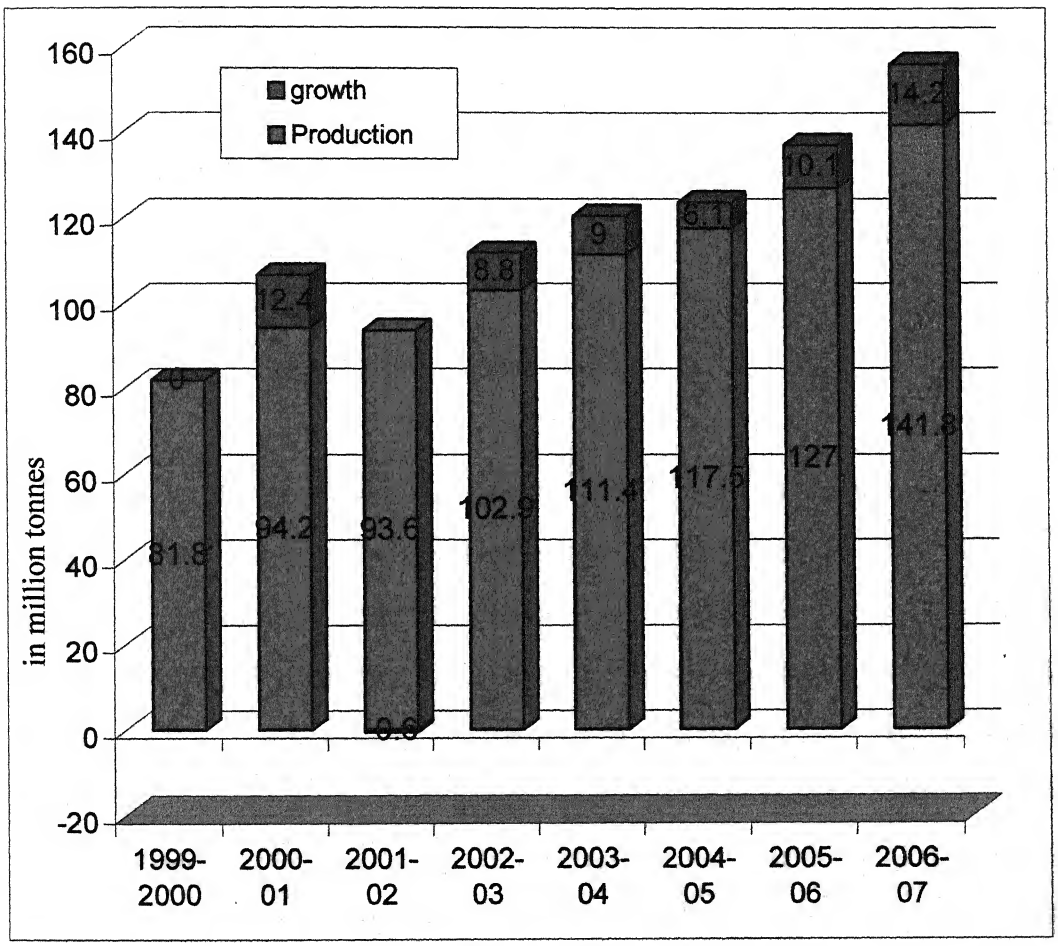
(IN MILLION TONS)

Year	Installed Capacity	Cement Production
1998-99	105	81.8
1999-00	111	94.2
2000-01	121	93.6
2001-02	135	102.4
2002-03	140	111.4
2003-04	144	117.5
2004-05	151	127.6
2005-06	157	141.8

Source: - **(ICRA WWW. ICRA.IN)**

Chart No. 2.1

India's cement production and growth



Source: Annual Report of ICRA, March, 2007.

The Mini-Cement Industry of India

In order to reduce transportation as well as capital to increase regional development and to make use of smaller limestone deposits, many-cement plants has been set up in dispersed location across India. Construction of such plants began in the Yearly -1980s and they're capacity (Including capacities of white cement plants, aggregate about 11.1million tonne per annum. The main attraction of the mini-cement plant concept is the lower Capital costs per tonne of requirement of large plants, against the requirement of more than Rs. 3500 per tonne of capacity of large plants; capital costs for mini-cement plants come to about Rs. 1,400-1,600 per tonne. This reduces to a large extent the fixed cost per tonne of cement producet. Also, as the main market is in the vicinity of a mini- cements plant, savings are large on transportation costs.

All these benefits how even are regretted by other factors like diseconomies associated with small-scale operation, significant competition form large-scale units and rising cost of production. The mini-cement plants almost entirely on the State Electricity Boards for power supply; captive generation is uneconomical for small size. A backup DG set for meeting 25% of the power it however usually provided for. Hence, even when mini-cement plants consume fewer units their power costs are comparable to those of pare cement plants. Further, reliance on SEB power implies exposure to frequent power cuts. Primarily, the mini cement plants were conceived to utilize isolated limestone deposits too small to Support a large Cement plants. Straightegically, the Policy marks may have viewed them as a counter weight against concentration, both in terms of output and as a means of reducing the threshold entry barrier. However most of these plants

are yet to make an up gradation from mini to large Cement plant. Even with the excise Concession, these plants have not made any significant inroads into the Indian Cement Market. One in roads into the Indian cement market, One inroad is that the quantity produced be these plants are extremely insignificant to give any real price completion to large Cement companies. The realizations achieved to large plants due to the quality Perception of the establishment brands of large companies.

Further, most of the mini-Cement plants are to some measure dependent on clinker from the large cement plants. Their flexibility to be price setters is limited by their poor financial health.

Process Technology: -

While adding fresh capacities, the Cement manufacturers are very conscious of the technology used. In cement Production, raw materials Preparation involves primary and secondary crushing of the quarried material, during the material (for use in the dry process) or undertaking a further raw grinding through either wet or dry process, and blending the materials.

Clinker production is the most energy-intensive step, Accounting for about 80% of the energy used. In cement production by during a mixture of materials, mainly limestone, Silicon oxides, aluminum, and iron oxides, Clinker is made by one of two-production process wet or dry; thus refer to the grinding process although other Configurations and mixed forms (Semi-wet, Semi-dry) exist for both types.

In the dry process, the raw materials are ground, mixed, and into the kiln in there dry state. In the wet process, the crushed and proportioned materials are ground with water, mixed, and fed into the kiln in the form of slurry the choice among different processes is dictated by the characteristics and availability of raw materials. For example, a wet process may be necessary for raw materials with high moisture content (greater than 15%) or for certain chalks and alloys that can be best processed as a slurry.

The dry process is the more modern and energy-efficient configuration. In general, the dry is much more energy efficient than the wet process, and the semi-wet somewhat more energy efficient than the semi-dry process. The semi-dry process has never played an important role in Indian cement production and accounts or less than 0.2% of total Production.

In 1960, around 94% of the cement plants in India used wet process kilns. These kilns have been phased out over the past 46 years and at present, 96.3% of the kilns are dry process, 3% are wet and only 1% is semi-dry process. Dry process kilns are typically larger, with capacities in India ranging from 3000-8,000 tonnes per day or tpd (average of 2,880 tpd). While capacities in semi-dry kilns range from 600-1,200 tpd (average 521 tpd) capacities in wet process kilns range from 200-750 tpd (average 425 tpd).

Over the last decade increased preference is being given to the energy efficient dry process technology so as to obtain a cost advantage in a competitive market. More, since the initiation of the decontrol process,

many manufactures have switched over from the wet technology to the dry technology by making suitable modification in their plants due new, even more efficient technologies the wet process is expected to completely phase out in the near future.

Due to the dominant use of carbon intensive fuels such coal in clinker making, the cement industry has been a major source of carbon dioxide (Co_2) emissions, besides energy Conception, the clinker making process also emits Co_2 due to the claiming process. Increased atmospheric concentration of gases such as Co2, methane and nitrous are believed to be responsible for the rise in global mean land and sea temperature since the 1855-2005. The warning occurs because these so-called green house gases, white they are transparent in incoming solar redaction, absorb infrared (heat) radiation from the earth that would otherwise escape from the atmosphere into space the green house gases are re-radiate some of this heat back towards the surface of the earth. Indians per capital carbon emission rate was 0.33 tonnes during 2003, which was below the global average of 1.14 and the smallest per capital rate of any country with fossil fuel Co2 emission exceeding 35 mt. of carbon.

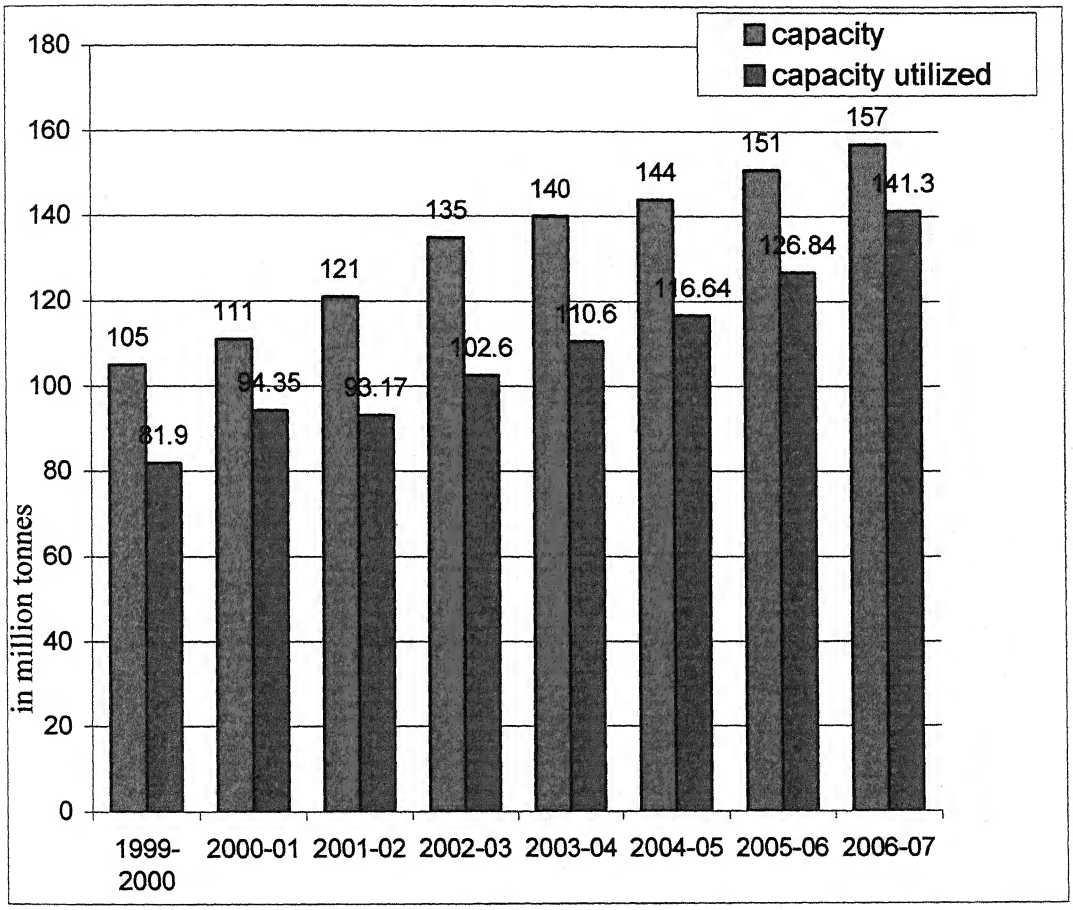
The global cement industry contributes about 4% to global emission making, the cement industry an important sector for Co_2 emission mitigation strategies. In India, while Co_2 emission from cement production has increased from 7.32 mt. of carbon in 1993 to 16.73 mt. in 2003, its share in total Co_2 emission by India has increased from 3.3% to 4.8% emission mitigation options include enhancing energy efficiency process conversion away from wet to dry semi dry processor; using blast furnace slag power

station fly ash, natural pozzolona or limestone as a constitution of the final cement thereby reducing the clinker reused, shift to low carbon fuels; application of waste fuels; and increased use of additives in cement making. In India, Co_2 emission per tonne of Cement production have declined with increased share of balanced cements, where energy use and associated emissions are reduced; increased share of dry process; energy efficiencies and other emissions mitigations measure Indian cement plants are also begging to explore the use of alternative and waste fuels, such as lignite, pet, Coke, tires nice huskes, groundnut shells, etc. to replace the use of cool in cement kilns.

After the complete de-controlled of price and distribution 1 March, 1989 and introduction of other policy reforms, the cement industry has made rapid strides bath in capacity production and in production process technology at present there are 129 large cement plants within 54 cement companies and over 300 million cement plants with in a total capacity of 157 million tonnes and production of 141.81 million tonnes. The utilization of installed capacity of my research period is given in Chart No.2.2

Chart No. 2.2

Installed Capacity And Capacity Utilisation



Source: Annual Report of ICRA March 2007

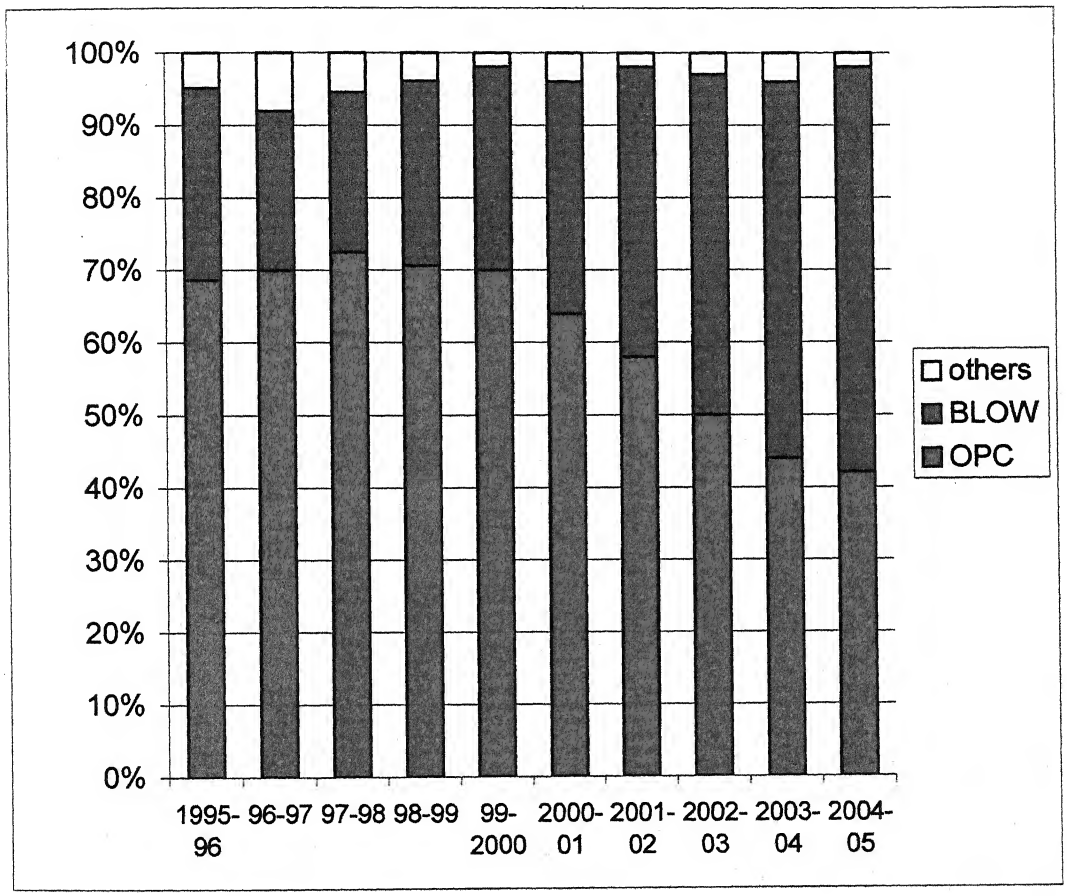
Process Trend:

In India, about 44% of the cement produced is Ordinary Portland Cement (OPC), 47% is Pozzolona Cement (PPC), 8% is Portland blast furnace slag cement (PBFS), and the remaining 1% is special cements. Blended cement (PPC and PBFS) has a low but rising share of India's cement production. Energy usage is significantly lower in blended cement because other materials such as fly ash or blast furnace slag replace a portion of the clinker. Blended cement are composite cement produced by blending clinker-which is the output of the kiln at the grinding stage with Pozzolonic or other material with cement like properties. Although compressive strength of the major types of blended cement is equitant to that of grade 33 OPC cement; blended cement offers a reduction in the risk of thermal cracking; superior performance under elevated temperature curing conditions; good long-term strength; higher resistance to acids, sulphates and alkali attacks, with more suitability for coastal areas; reduced permeability with consequent improvement in durability, smoother finishing, etc.

In India, the share of blended in the total production had increased from 47% in 1978-79 to 76% in 1982-83. After this, the Indian cement industry witnessed a higher production of the higher grade OPC, and the Production of blended cement gradually declined to 27% in 1992-93. However, this was followed by an upward trend, and the share of blended cement reached approximately 56% in 2004-05.Process Trend of my research period given in Chart No.2.3

Chart No. 2.3

Process Trend of Indian Cement Industry



Source: Annual Report of ICRA March 2007

Reasons behind the historically low share in consumption of blended cement in India:

- As the compressive strength of the blended cement is comparable to the 33- grade OPC, which is the lowest grade, the market perceives the blended cements as relatively lower strength varieties.

- The cement Consumer is not confident of the quality of the blended material used for manufacturing blended cements.

- The darker colour of blended cements and the colour variation in them are mistakenly attributed to impurity. For example, PPC is generally of darker colour as compared with OPC because of the carbon present in flash.

- Consumer are yet to realize the advantages of using blended cement in certain locations, like aggressive soils, further, there is a wrong impression in the market that addition of blended material degrades the properties of blended cements.

These receptions on blended cement are gradually phasing out with consequent increase in consumption share of blended cement, In fact there are certain regions in India, such as Punjab, Himanchal Pradesh, Jharkhand, Uttar Pradesh, Chhatisgarh, Tamilnadu, Kerla, Bihar, Orrisa, Madhya Pradesh and West Bengal, Where blended cement is more popular and hence, more than 50% (More than 80% in some cases) of the cement produced in these states is of the blended variety.

Give the Strong benefits associated with the use of blended cement; the industry can initiate corrective action for enhancing its consumption. Some of the likely ways in which this can be done are as follows:

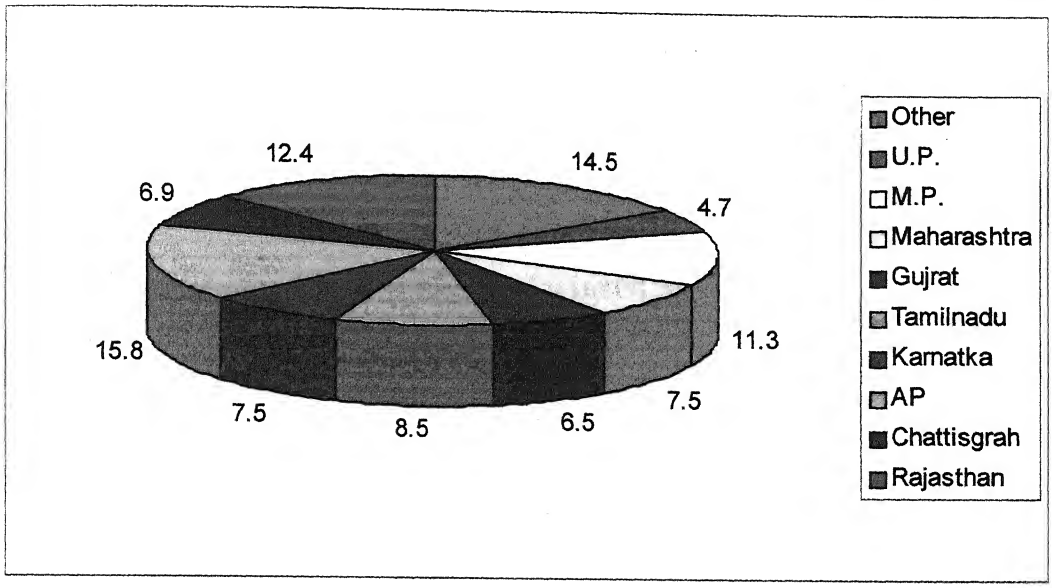
- Improving the quality of the additive. For example, the quality of a pozzolonic material like flyash can be improved by processing it, so that its fineness and chemical composition can be assured.
- Increasing customer awareness by organizing training programs.
- The Government can also play a role by taking strategic initiatives like increasing the concession on excise duty on blended cements, or providing sales tax exemption benefits to producers of blended cement. Key benefits acquiring to the country from this move would include greater pollution control (because of the effective use waste material like slag) and preservation of the valuable limestone reserve of the country. Besides, it would also help in improving the construction quality in the country.

Andhara Pradesh is the largest cement producing state with an installed capacity of 24.9 million tonnnes and cement production during year 2006 was 19.9 million tonnnes. Other major cement producing states include Rajasthan, Madhya Pradesh, and Gujrat are also contributed.

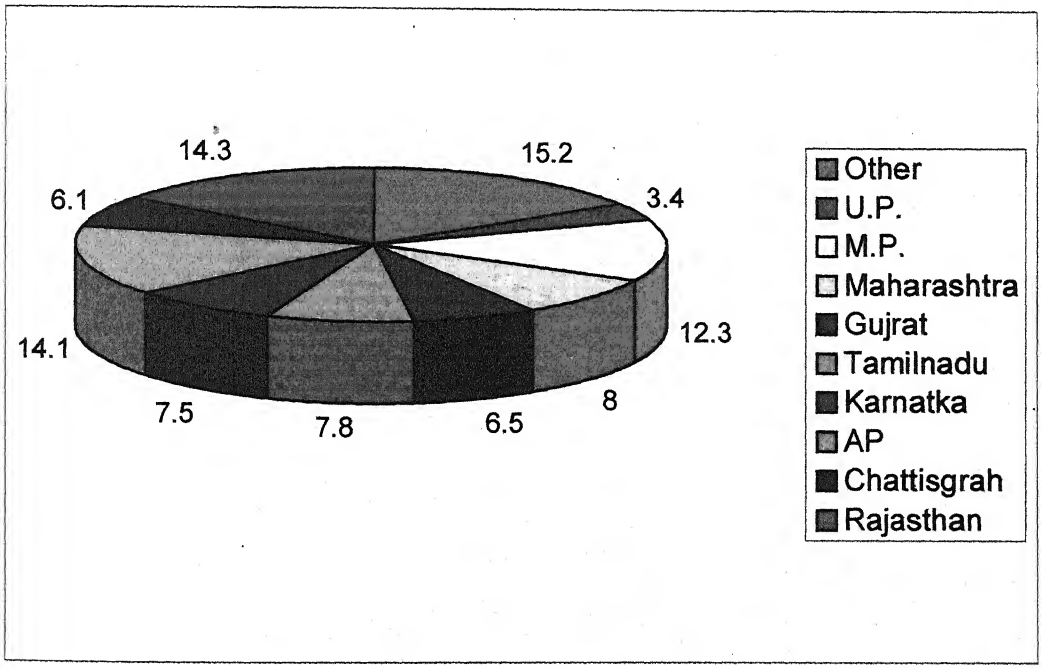
Chart No. 2.4

Major Cement Producing States

Capacity (in %)



Production (in %)



Source: Annual Report of ICRA March 2007

About 15 units were declared sick because there is no proper depreciation policy in these units. Another thing is that the cement industry faced crises situation due to state government phenomenal decision to increase the mineral Tax .[1] On making a primary security it was found that the main reason for closure of these units was their defective depreciation policy[2]. The names of these sick units are given in table No. 2.4

Table No. 2.4

The Cement Units Which is declared as Sick.

S. No.	Units
1.	ACC, Dwarka
2.	ACC, Lakheri
3.	ACC, Sindri
4.	India Cement Shanker Nagar
5.	The Jaipur Udyog Ltd. Sawal madhopur
6.	Kalyanpur Cement Ltd.
7.	Sone Velly Portland Cement Co. Ltd.
8.	Tamil Nadu Cement Ltd., Ariyalpur
9.	Tamil Nadu Cement Ltd., Alangalam
10.	UP SCC Churk
11.	UP SCC Dalla
12.	ACC, Khalary
13.	ACC, Sevalia
14.	OCI, Charkhi Dadri
15.	Visvesveraya Iron & Co. Ltd.

(Source: - 'Cement' Vol. XIX No. 4 July -Sep 1986.)

1. Economic Time "A.P. cement units in crisis"ct.18, 1984p.1
2. Cement Vol. XIX No. 4 July-Sep. 1986

Problems Facing the ACC, Prism & other Cement Industry

The Problems faced by the cement industry can be divided under the following broad heads: -

(1) Actual Shortage of Lubricants Greases and M.S.D. Oil: -

The Cement Manufacturers have been encountering difficulties in procurements of vital lubricants needed for highly sophisticated equipments like steam turbines, earth moving equipments, large and heavy-duty gearboxes etc. The non-availability of right type of lubricants have been adversity affecting the operation of many of the cement units.

It is found that even low grades at engine oils meant for ordinary tracks were recommended for use in heavy-duty earth moving equipments. The situation had been worse as regards turbine oil for powerhouse's axle oils for compounded lubricants for heavy-duty gearboxes and axle oil for railway wagons. The supply position of high temperature grease and other types of greases had also become critical. Even Indigenously prepared greases like index No. 20 for kiln girth gears and multipurpose greases for automotive lubrication were difficult to procure. The use of low-grade lubricants would prove to be extremely deterred mental to the life of costly imported earth-moving equipments the replacement of which had become impossible due to both non-availability from indigenous sources and paucity of foreign exchange.

(2) Transport Difficulty: -

Availability of means of transports is a problem faced by the cement Industry Cement is transported in bulk quantity. It is necessary to develop back loading handing, transport and ship loading facilities at selected ports. Non-Availability of railway wagons is another problem as movement at cement of distant places by road is very costly. Risky and burden some.

It is generally happened that raw materials used in the cement industries are not carried by Indian Railways at scheduled time. Specially the coal and lime stone are not transported by Indian Railways when one asks about collori where stocks have piled up, This is likely to be answered by railway authorities in general terms such as "operational difficulties" or dislocation of rail movement due to strikes, go slow by worker's or civil unrest. The situation is worst in case of carrying finished product of cement industries. The goods handed over to railway authorities or are mishandled and stolen by unsocial elements. The result is about 20% raw materials are in short when weighted at factory go down. It is the common practice that from 3 to 5 Kg. Cement is in short in one bag of cement of 50 Kg.

The second and last substitute as mean of transport is road transport. It is to costly and scheduled delivery for continuous supply is not assured by transport companies it is found that transport companies are charging any amount as freight and this amount is fluctuating from 50% to 200% as per availability of trucks and need of cement industry. It is hoped that with economic liberalization and with added emphasis placed by united front government on infrastructure the Industry will meet its challenges.

(3) Modernization: -

Out of the total cement production in our country nearly 84 percent is being produced by the dry Process technology. The other technologies are wet process or semi-dry process technologies. The modernization program has included conversion of wet process to dry process, energy conservation measure, Computer controlled system etc. An investment of Rs.30 Billion was incurred on modernization of cement Industry in our Country Many units in cement Industry could not rehabilitate or modernize their plants after their establishment. In 8 Units out of 12 units of my study, plant & machinery are more than 40 to 50 Year's old. As regards to modernization Conversion of wet process to dry process may not be economically viable due to poor quality of lime stone or its limited deposit, small size and age of the kiln etc.

It is common knowledge that to ensure optimum utilization of capacity by restoring health to the existing plants entails a fraction of cost of installing new capacity. Besides the magnitude of work involved a creating new capacities is enormous. Yet, there is no separate provision in the prices structures for the purpose of rehabilitation and modernization of machinery and equipments.

The Industrial Development Bank of India, Which is implementing the soft loan scheme[1] for modernization and rehabilitation of machinery and equipment in the cement industry but the industry, has not

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1. 'Cement' Vol.XIII No.3,April-June,1999.

been able to derive benefits from the soft loan scheme of the IDBI (industrial Bank of India). It is only because the scheme is extremely limited in scope and does not meet the special requirement of the cement industry.

(4) Powers:

Availability of power in large quantity is pre-requisite in cement manufacturing shortage of power supply; about Frequent power cut is the other of the day. It is important to note that about 55 percent of the cost of production of cement cost belongs to power. Besides this, ash content in coal is 57 percent, which is very high, which further, increase the cost of production.

The position regarding availability of power has undoubtedly remained some what unsatisfactory in the country. Power cuts have been imposed on high-tension industries on the whole. The industry is still bugged by the phenomenon of voltage fluctuation and sudden power shedding, which not only affects the production adversely, but also puts the equipment to avoidable stresses.

(5) Coal: -

As a major consumer of coal, next only to the power sector, the steel industry and the railways, the cement industry is greatly dependent among others on the supply coal, coal is not merely a fuel for this industry but also a raw material used in the process of cement manufacture. It was stressed that the poor quality of coal poses many serious problem for the industry.

First- It increases the coal consumption itself and demands a higher line content in the raw material, constituting a waste score resources.

Secondly- it creates operational problems, impairing efficiency and causing break down and interruptions.

Thirdly: - quarrying operations, kiln operations as well as grinding operations are seriously affected besides becoming more expensive.

To make matters worse, the quality of coal supplied to the cement industry has been progressively deteriorating with high ash and moisture contents often enough sale and other foreign materials have been found in coal supplies received by cement factories.

(6) Distribution: -

The problems under distribution arose due to concentration by large of production units around areas of limestone deposits, its demand being spread through the country. Further, the present level of production of cement is insufficient to meet the demand and shortages, which have persisted in the recent past, leading to black marketing of this commodity. In order to ensure an equitably distribution of available supplies of cement at a uniform price throughout the country, The Government has been exercising control over distribution of cement and its price. Under the price control measures, the government fixes the price payable to the manufacturer, by equalizing railway freight charges on movement of cement the F.O.R. price of cement at all destinations is kept at the same level. While the Government has been neutralizing freight differentials for the final product, no such equalization was undertaken in respect of procurement of raw materials, such as lime stone gypsum and coal, As a result production

cost of cement varied from unit to unit, depending on the nearness of the plant to the source of raw materials though the price payable for the product was the same for all units. The difference in the power tariff in various states, in some cases even within the states for different units also aggravated this problem. In the Process, the unit cast of Production of some cement plants exceeded the retention price allowed by government to the manufacturers with every increase in costs not compensated fully by increase in the retention price, the manufacturers are at a disadvantage and the level of profitability falls.

(7) Fear of Nationalism

At Present all the industries of the country are apprehensive of being nationalized. This is particularly so when one talks in consideration of the fact that the cement industry has been the least profitable. A major portion of the industry has been languishing for years in the form of marginal or loss making units. It a proof was needed of the veracity of statements, our government should only cost a glance at the recent Phenomenon when most of the cement units faced with precarious financial conditions have thrown out of employment thousands of workers in a period of actual unemployment. Surely, mismanagement is not the monopoly of cement industry in our country; where a variety of other industries thrive. The failure of a cement unit that closed down cannot therefore, be attributed solely to mismanagement as has often been made out.[1] It is far cheaper to

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1.In the case of Jaipur Udhyog Ltd. Rajastahn Govt has adapted same policy.

help a unit while it is on its feet than to wait till it folds up, causing serious break in employment.

Such post-mortem salvage operations are invariably expensive just from the disorganization caused through stoppage of production and the deterioration caused to machinery through suspension of operation. Timely financial help through loans and guarantees would yield for better results, as lesser sacrifice in terms of employment than procedural delays and indecisions resulting in the closure of the industry for same time. There are, of course, units beyond salvage and they have unavoidably to be scrapped. As things stand today government enterprises seems to have waned.

(8) Under Utilization of Capacity: -

Nearly 24 percent of the installed capacity of cement is unutilized. The Problem of under utilization of Production capacity results into increase in the cost of production. Under utilization of capacity in India is probably the highest in the world and is largely due to non-availability of raw materials at reasonable price and shortage of power. The cement unites in India would stand to lose heavily as not only there would be loss in production due to extra weekly holiday, but financial burden too due to the obligation to pay lay-off compensation. These shortcomings must immediately be over come to make cement available. The Industrial capacity of the country must be utilized at optimum output.

(9) Inferior Quality Control: -

Indian cement industry has ignored the quality control factor cement made in India is of inferior quality. In order to meet the challenges of globalization, Indian cement industry must gear it up to adopt ISO 9000 is 14000 series of standards and the total quality management.

(10) Low Profitability: -

The Profitability of cement industry is generally below that of other industries In order to sustain, modernize and expend this industry reasonable profits have to be earned and ploughed back into it. If we want the supply of cement to our citizens at a reasonable cost, the capacity of the industry has to expand and the productivity has to be increased through modernization. Both measures need investment. In addition our cement prices have to be brought down to world price levels so that we can price our products at a reasonable level in the home market and become more competitive in the world market.

(11) High Tax Charges:

While the railways have had capacity to meet the requirement, it is expected that in March-the commencement of peak season for the procurement of food grains, the railways would be constrained to provide adequate number of wagons. "So freight rates are up, railways cannot provide wagons and trucks are unlikely to be viable so there could be a serious dislocation of supplies going forward. The concern stems from both side-cost of freight and whether there is enough capacity to move cement." Said Mr. Jain.

According to the Cement Manufactures association (CMA), total taxes and duties on cement come to around Rs. 900 a tonne or Rs. 45 a bag." So at a price of Rs. 150 a bag in he market, one third is accounted for by taxes and duties; which is high for such a basic product. This includes excise duty, sales tax, royalty tax and royalty on limestone, which is one of the highest as a percentage of the pithead cost," Said Mr. Jain.

The importance of limestone can only be underscored as for every tonne of cement produced, 1.5 tonnes of limestone is required. "For limestone, royalty is on a per tonne basis of Rs. 40, whereas for most minerals it is a percentage of the pithead cost. Effectively we are paying Rs. 70 a tonne for limestone as royalty. VAT is at 12.5 percent without any justification and it should be in 4 percent category, excise is at Rs. 408 per tonne when it should be around Rs. 200. In all aspects, we are way above what a commodity like cement should attract."[1]

(12) Freight/Logistics problems:

The importance of freight for the cement industry cannot be emphasized enough. While in the last few months, railways have been steadily losing freight to road sector they have been confined to long distances. The outward freight- freight to move finished cement to market-is around Rs. 350-400 a tonne or Rs. 20 a bag and that could go as high as Rs. 800 for long leads. This would only reach the first level of sale and additional costs are involved to take it further.

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1. **Survey Of Indian Industry 2006. Published By The Hind**

Another issue, which will hit the industry hard, is that of logistics and a Supreme Court judgment on 'carrying capacity' for trucks. Accordingly, State governments have been directed to enforce the discipline that trucks only carry a specified load. "Many States are already implementing this and there is already an increase in freight rates and in some cases, it has gone up by 50 percent. Also, the requirement for trucks to carry the same freight has nearly doubled and in many places, the industry is being forced to move to railways."[1]

Problem of Cement Industry in Madhya Pradesh and Their Solution:

1- Improving the management in cement industry so as to make the industry more competitive in domestic market should reduce cost of production..

2. Mini-cement plants have to face stiff competition from large scale units. Their development is possible on an increase in the demand for cement in future.

3- Power supply should be adequate and regular and the future of this industry along with other industries would depend upon factor to a great extent.

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1. Survey Of Indian Industry 2006. Published By The Hindu

4- Most modern plants should be started in future along with the modernization of existing units so as to make the industry viable and competitive. As stated earlier the future of cement industry in bright in Madhya Pradesh. The state Government reduced the central sales-tax on cement industry from 16% to 7% in state-budget for 1990-91, so that sales of cement may be promoted and entrepreneurs may not resort to 'Branch-transfer' to sell cement in other states.

Conclusion:

In modern time cement is as an essential as food grain item. In India cement industry is among five oldest industries. The manufacture of cement started in Madras State (now Taminadu) as long back as 1904 by South India Industries Ltd. The cement manufacture by this company was 30 tonne per day. The problems faced by the cement industry can be divided under following heads:

(a) Acute shortage of lubricants, greases and HSD Oil
(b) Transport difficulties
(c) Modernisation
(d) Power
(e) Coal
(f) Distribution
(g) High tax charges
(h) Fear of Nationalisation

(i) Under Utilisation of Capacity

(j) Low profitability

:

The State of Madhya Pradesh is regarded as a leading state in cement industry. Ample quantity of cement grade lime is found here. The problems given are in above are in also M.P, but the position of profitability is much better than any other state.

Chapter – 3

Conceptual framework of depreciation accounting

- Meaning and definition
- Accounting concept and other concept
- Aspect of depreciation accounting
- Method of depreciation charges
- Criteria for judging depreciation method and their Comparison

CHAPTER - 3

Conceptual Framework of Depreciation Accounting

In view of the fact that depreciation accounting has assumed greater significance in modern time because of rapid industrial growth and increasing cost of replacement, knowledge of meaning, definition concept aspect, postulates and method of writing of fixed assets before making a critical analysis of its application in the cement Industry in "Madhya Pradesh."

Meaning and Definitions:

Here an attempt is being made to present definition of important terms used in depreciation accounting. Definitions given by standard authorities, professional bodies and professors have been given with suggested modification.

Assets:

Any owned physical object (tangible) or right (intangible) having a money values an item or sources of wealth, expressed in terms of its cast, depreciated cost or less frequently some other value; hence any cost benefiting a future period.

Asset differs from "Property" in that the former means any item appearing on asset side of a balance sheet whereas the latter means item transferable between persons, and right to its uses and benefit safe guarded and governed by body of law. The amounts at which assets are recorded do

not necessarily indicate their current value but rather cost of that portion of cost fairly allocable to succeeding periods. The above definition given by Dr. N.K. Sharma[1] dose not covers fictitious assets like debit balance of profit & loss account and differed revenue expenditure to be allocated to future operations. The committee on terminology of the American Institute of Certified Public Accountants has given a better definition.

Something represented by a debit balance is or would be properly carried forward upon closing of books of account according to the books of accounting (Provided such debit balance is not in effect a negative balance applicable to liability) on the basis that it represents either a property right or value acquired, or an expenditure made which has created applicable to the future.[2]

Accounting: -

Accounting is the language of commerce, the language is which the history of a business to be recorded its operation are summarized, the financial condition is stated and its budget forecast are expressed.

Fixed Assets: -

Fixed assets imply properties of permanent nature by mean of which the concern is carried on and which are held for the purpose of earning income and not for the purpose of resale in other words fixed means those properties tangible or intangible (i,e,fixed assets mean these properties perceptible to the senses as having physical substance like-land, building, plant & machinery, equipments, furniture, fixtures, patterns,

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1.Sharma N.K. : "Non current Assets Account" Ed. 1991,12 RBSA Publishers, S.M.S. Highway, Jaipur, Page 7
2- Sharma N.K.: Fixed Assets Accounting "Ed. - 1993, RBSA Publishers, S.M.S Highway, Jaipur Page – 16

drawing etc. and an assets is intangible if its value resides not in physical properties of the assets itself, but in the right which its possession confer upon its owner like goodwill, patents) which business has acquired for use in producing goods or services and which are not for resales so long as they are serviceable.

According to the Johnson and William, "Fixed assets may be defined as assets which will provide service for a period longer than one year. They are required for use in the business and are not mean for resale. The majority of fixed assets are subject to depreciation and limited productive life. Land is a passable exception but even land in some forms of use will reduce in value (e.g. as a mine or quarry). Thus fixed assets are those acquired for the purpose of use in the business with the object of earning revenue which is not intended for resale at a profit and conversion into cash in the ordinary course of business."[1]

Block Account: -

In fixed assets accounting the most common term used "Block Account" it is nothing but the collective name for the fixed assets of an industry/organization. The various fixed assets stated at their original cost are referred to as gross blocks or gross block expenditure or total block account. This term implies the total fixed investment made in fixed assets. The term net block or depreciated block thus means the original cost or total investment in fixed assets minus the total amount of depreciation provided since their acquisition.

1.Johnson and will aim: - "Depreciation" Ed. 1994, Englewood cliffs, new jersey : practice Hall, Page 271.

Fixed Assets Accounting: -

Fixed Assets accounting is a system of accounting which aims at distributing cost or other best value of tangible capital assets[1]. This observation points the fact that the purpose of fixed assets accounting is to allocate in systematic manner. The cost of productive facilities over their, useful life so as to measure periodic income as precisely as possible.

Replacement or Renewal: -

The replacement of one fixed assets for another particularly of a new asset for an old or at a new part for an old part on the book of account the recognition at the cost of the new assets requires the elimination of the cost of the assets it replaces.

Betterment: -

An expenditure having the effect of extending the useful life of an existing fixed assets increasing its normal rate at output, lowing its unit cost of operation, or otherwise, adding to the worth at benefit it can yield.

Service Life: -

The age on an asset at retirements means retirement at fixed assets from producing or service.

Obsolesce:-

Obsolesce is loss of usefulness occasioned of progress of the technology or by such other external causes as changes in consumer demand and legislation or regulation leading to the reduction of future production.

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1. Accounting Reserves Bulletin No. 22 of the American institute of accounts, Page 121.

Wear and Tear: -

A factor of depreciation caused by ordinary use, disuse or lapse of time and action of elements.

Fluctuation: -

It is nothing but a variation either upward or downward of the market value of an asset brought through economic factors.

Amortization: -

It means the gradual extinction of an assets or cost over the period of its benefit.

Inadequacy: -

Inadequacy is loss of usefulness brought about by business change due to an alternation in the character, rate of quantum of production.

Depreciation: -

This is an allocation of the depreciable amount of an asset over its estimated useful life. This amount is charged to income either directly or indirectly. Depreciable amount of a depreciable asset is its historical cost or other amount substituted for historical cost in the financial statement less the estimated salvage value.

Repair and maintenance: -

This cost of restoration of a capital asset to its full productive capital. After damage, accident or prolonged use, without increase in the previous estimated service life or capacity.

Accounting concept and other concept: -

In this observation it seems to be implied that despite the growing significance of depreciation. Accounting in modern time the term depreciation assets accounting appears to be over worked and its concept much confused. The concept of depreciation accounting as used in Economics, Engineering and Law is quite different from its popular concept i.e. accounting concept, if this basic fact is over looked. One is sure to be involved in confusion regarding the concept of depreciation accounting. In view of this fact, therefore different concept of depreciation accounting have been examined in following paragraphs:

Accounting concept

The popular concept or accounting concept emphasizes the importance of cost value as well as book value because the basis of scrap value or salvage value of fixed assets is technically determined and it is a basis of the letter, the realizable value of the fixed Asset. In this context the cost value means the value represented by the price, which was paid for a fixed asset. Thus the cost value is quite different from the book value or balance sheet value of a fixed asset. The book value or balance sheet value represents the amount of cost of an asset, which remains to be written off against revenue over the remainder of its expected life.

The scrap value is the value of fixed asset realized at the end of life of fixed asset in the best possible way after it has been worn out. In other words, the scrap value is equal to estimate & resale value of a fixed asset at the time of retirement of fixed assets.

Economic Concept: -

According to the economists a fixed asset of a business is a bundle of future services and its value is the present value of these services at the end of the particular financial year in comparison to the present value at the commencement of the particular financial year is a measure of depreciation. As fixed assets contribute to the working capital, their depreciation is a contribution towards working capital.

Legal Concept: -

It signifies the value, which is the department of Income tax, Government value and their legal authorities place upon or recognize for taxation, registration, compensation and other legal purposes. It is the value, which is legally of greater significance because on the basis of this value fixed assets are valued to pay tax, registration fees, payment of compensation etc.

Engineering Concept: -

A comparison between the service ability of the particular fixed asset at the end of the period and at the commencement of that period is measured. In this concept, replacement value is taken not of, which means the value of fixed asset in terms of the cost of another fixed asset of the same or similar type, which is to be substituted for the existing fixed asset.

Appraisal Concept: -

According to this concept, an existing old fixed asset is compared with the hypothetical new fixed asset used as a basis of valuation. Thus two different fixed assets are compared on a single date in order to determine appraisal value

It is better to analyze different concept of depreciation accounting to understand the subject matter. Although it is true that accounting concept is the only popular concept and recognized concept, economic concept, engineering concept and appraisal concept are not less important in modern time, where at every State Government interference and inflation, the price of fixed assets are increasing continuously.

Aspect of Depreciation Accounting: -

Accounting aspect of depreciation accounting recognizes only the historical cost of fixed Asset. Thus according to this aspect historical cost is considered for calculating depreciation on fixed Assets, but now majority of accountant are thinking replacement value of fixed assets for price fixation purpose. This practice is at variance from recognized principle of financial and cast accountancy.

Principle and Postulates:

The term postulates refers to assumptions, which are made for the development of concepts or definition and principles of a profession. Postulates are accepted without any proof of their existence or accuracy. Like any other branch of knowledge, depreciation accounting is also based on certain postulates these are given below:

(i) Limit Service life: -

Fixed assets have a limited service life due to physical and financial factors.

(ii) Continuity of operations: -

The business unit will continue its operation. It is not be wound up during service life of an asset and thereafter.

(iii) Divisibility of Enterprise Life: -

The life of business enterprise can be divided in terms of certain accounting periods.

(iv) *Measurability or Serviceability: -*

Usefulness or serviceability of a depreciable asset can be measured either in terms of year's or some other service unit e.g. hour's, physical unit and output etc.

(v) Stable Value of Money: -

The Law of land assumes that value of money is stable for the purpose of financial transaction.

Under the forgoing assumption the initial cost or bargained price furnishes the basis for the valuation of fixed assets. Accounting to this postulate all fixed asset must be taken at their exchange value at the time of acquisition, further more, the sensible conservation in all matters involving valuation allow for making provision for all expenses or losses effecting a period by excluding revenue or gain until it has been realized for this purpose. It is emphasized that transaction must be analyzed and recorded in the same way from one period to another and be presented and classified in the same way from one period to another and classified in the same way in the statement of successive periods. It is also required that full disclosure of accounting policies and procedures effecting valuation of fixed assets or

assignment of costs should be made in financial reports by means of footnotes, Parenthetical explanation or separate schedule. When major change are made these changes and their effect upon the statement should be brought to the attention of the reader by means of footnotes, Parenthetical statements or attached schedules. This procedure will undoubtedly help in maintaining consistency of treatment for comparison of successive statements. Any procedure once adopted should not be changed or sifted indiscriminately by the management especially for ulterior purpose. In setting property valuation and computing net income due attention must be paid at the statutory and common like applicable thereto.

Depreciation: -

Depreciation is nothing but difference between the original cost and the probable break-up value would represent the loss to be suffered by the business organization on account of use of such assets. Depreciation is on accruing loss of value, which begins with cost now and ends with scrape value at the end of the fixed assets useful life. The use of the term like "Provision for Depreciation" or "Depreciation reserve" in accounting statement has made the reader to believe that fixed assets accounting provides fund, but however, depreciation charges in accounting simply recognizes the fact that existing fixed asset has lost a portion of its serviceability, through use, disuse, obsolescence's, Inadequacy. The provision for depreciation means only that a book entry has been made resulting, in an expense deduction in the profit and loss account and a reduction in the asset casting value from cost to lower amount. Some people think that depreciation charges automatically provide funds and all that is necessary to obtain more money to acquire more depreciation is a completely mistaken view funds for replacement may be provided only

when cash equivalent to the replacement cost is invested outside the business in ready marketable securities or kept in some other liquid form.

Approaches to depreciation: -

The following approaches to charging depreciation are worth mentioning in connection because the problem involved in depreciation account will remain unsolved, until the accountant keeps these considerations in view.

(i) ***Valuation Approach: -***

According to this approach, depreciation is considered as the balancing difference between cost of fixed asset and current value of fixed asset. In this approach both positive and negative depreciation must be realized.

(ii) *Appraisal Approach: -*

According to this approach to different fixed asset are compared on a signal date in order to determine depreciation. Thus, difference in the value of existing old assets and hypothetical new assets is treated as depreciation of that fixed assets, thus, it is clear that in this approach an attempt is made to determine what one could offered to pay for the old asset in comparison with the hypothetical new one.

(iii) *Accrued Renewals Approach:-*

According to this approach there must be periodical setting aside of funds in such a way that when the asset has no further use. Funds will be available to meet the expenditure on fixed assets. Depreciation

accounting to this approach is the accrued liability for the differed or periodic renewals of fixed assets.

(iv) ***Manufacturing Cost Approach: -***

According to this approach, depreciation it only in relation to manufacturing cost of goods sold. It is concerned with naught but the problem of adding the cost of asset to the total cost of the goods processed through the use of the fixed asset. This approach is not concerned with whether prices of the product go up or down.

(v) ***Replacement Cost Approach: -***

According to this approach depreciation is calculated on the replacement value of fixed asset instead of historical cost of fixed assets. Due to price inflation, this approach is considered better because it reflects real cost of the product and it helps in price fixation also.

(vi) ***Service Expected And Expired Approach: -***

According to this approach depreciation should bear relationship to service expected and services expire of day to day, The difference between service expected and service expired day to day is treated as depreciation of that fixed asset.

Methods of depreciation charges: -

There may be various methods available for calculating the amount of depreciation to be charged to profit and loss account. Amount of depreciation is functions at various factors are time, usage, time & usage

and time & cost of maintaining the fixed assets, As such the various methods available for charging the depreciation can be describe as below.:

1. **Straight Line Method.**
2. **Decreasing Change Method: -**
   (i) Fixed rate diminishing base method.
   (ii) Double balance method.
   (iii) Arbitrary decreasing charges method.
   (iv) Diminishing rates on cost method.
   (v) Straight line method with rate changes.
   (vi) Sum of the year digit method.
3. **Increasing Charge Method.**
4. **Interest Method**
   (i) Annuity Method
   (ii) Depreciation fund method.
5. **Production method.**
6. **Revaluation method.**
7. **Other methods.**

Above methods details and explanations are given below: -

1. Straight Line Method: -

This is also called; fixed percentage method; original cost method or fixed installment method. Under it a fixed percentage at the original cost of the assets is written all each year till the assets is ultimately reduced to nil or its break up value thus the entire cost less the scrap value is written all during the estimated working life after which the assets becomes value less.

This method is simple in calculation however, as the charge at repaired increase with the passage at time, the effects on net profit are heat steady every year, a lot of calculation are involved in case at additions made to the assets. According to this method the amount of yearly depreciation is calculated as below:

$$\text{Depreciation} = \frac{\text{Cost of Assets: - Estimated Scrape Value}}{\text{Estimated life in Years}}$$

Example: -

Cost of Asset	Rs. -	2,20,000
Estimated Scrap Value	Rs.-	20,000
(At the end of life of the asset)		
Estimated life	-	10 Years

$$\text{Yearly depreciation} = \frac{2,20,000 - 20000}{10}$$

$$= \text{Rs. } 20,000$$

The benefit of this method is the equal amount of depreciation is charged every year throughout the life of the assets, making the calculation of depreciation and cost comparison easy. The main draw back of this method is that the amount of depreciation in later years is high when the utility at the assets is reduced.

The formula of calculating depreciation is as follow: -

$$D = \frac{C - S}{N}$$

Where

D = Stands for depreciation for the Particular Year

C = Stands for cost

S = Stand for scrap value

N = Stands for number of year of estimated life at assets.

2. Decreasing Charged Method: -

It is also known as diminishing value method 'or' decline balance method or diminishing balance method. Under this method it a fixed percentage is written every year on the reduced balance of the assets. The percentage of depreciation is not applied to the original cost but only to the balance, which remains after charging depreciation in the banging at a year it remains fixed for all the years of the working life of an assets. However the actual amount of depreciation written off every year goes on decreasing with the reduction in the value of the assets till after the expiry of the working life, the value of the assets is brought down to its scrap value.

In the case of assets, which have fairly long life and which require plenty of repairs e.g. plant and machinery. However it is not at much use for assets having short life for which depreciation has to be charged at a uniform rate.

Decreasing charge method is developed from one at the shortcomings of the straight-line method. It is suggested that repaired tend to increase as the machine approaches at the end end of its useful life. Accordingly depreciation charges should be smaller as the repair charges increase so that the sum of the two charges may be equalized over the life of assets. Some decreasing charge methods, which are generally hatted discussed in text-books are discussed in this leading.

(i) Fixed Rate Diminishing Base Method: -

The most common decreasing charge method is the reducing balance method, its another name is 'diminishing' balance method, written down value method reducing balance method, reducing installment method and accelerated depreciation method. This method requires a given Percentage of the written down value of the asset to be user as the figure for depreciation expenses. This method will never depreciate the entire cost of an asset but required an explicit implicit salvage value of a significant size. In this method, depreciation rate is constant but it is applied each year to the different between the asset account and depreciation reserve account (book value).

The assumption is that a constant percentage of the value of asset at the beginning of each particular depreciation period is last during the period. This method enables more or less an even charge during to reserve each year. Heavy depreciation charges during the first year are balanced by small depreciation charges in our Income Tax Act; this method is followed in each case except in the cost of ocean going ships.

There are two approaches in this method. In the first approach, we estimate the salvage value and then complete the fixed percentage rate. This method cannot be used unless a salvage value is assumed. This approach is rarely used because rate varies with the salvage value and bears no relationship to the way the asset is actually depreciating. In this second approach we decide a constant percentage rate with which result is the salvage value of the unresolved cost of the end of the assets life.

As soon as an asset is put to use, its value, for sale purposes falls heavily. Under this method, the depreciation is the heaviest in the first

year, that it reduces the book figure to its appropriate value, the rate applied would require to be high so that at about the time. The asset has ceased to be useful it will be written down to a negligible amount, the formula, which enables the ascertained, is given as under.

$$V = 1 - n\sqrt{\frac{S}{C}}$$

Stands for

V = Percentage to be applied

N = Number of years of assets life

S = Scrap value

C = Cost of assets

There arises a problem when assets are acquired during the year and less than full year's depreciation is to be taken during the first and last year of the service life. The logical solution to this problem is to compute the depreciation for each year for a whole number of years of service life and than allocate each annual depreciation charges between partial years.

Instead of charging depreciation at a flat rate on the net value of asset as standing at the end of the accounting period, this matter can also be dealt with in two other way, first depreciation is charged on the value of the asset as appearing at the beginning of the period, additions and sales during the year are ignored. Secondly depreciation is charged on the computed number of month an asset has been in the factory. Alternatively, table are available showing the balance remaining at the end of successive years when depreciation is calculated at a given percentage rate by examining several tables at different rates of depreciation. A rate may be

found which will reduce the cost of residual value at the end of the expected life of the assets.

This method is suitable for plant and machinery, furniture and fixture and particularly those types of assets, which are subject to serious wear and tear, such as road vehicles, it is not suitable for such assets as leased, which must be reduced to zero value in definite time.

(ii) Double Declining Balance Method: -

Many concerns usually apply in this method using twice the straight-line depreciation rate without regard to the residual value and declining block value of asset. For the first year, the rate is applied to the cost of depreciable assets and since the second year the rate is applied to the declining balance. In practice, service life of depreciation asset generally terminates before the full allocation of cost. Hence, a switch over to straight-line method is made near the mid point of the life.

(iii) Arbitrary Decreasing Charges Method: -

In this method we divide the depreciation base into two or more segments and allocate each segment over different portions of service life. For example depreciable assets cost Rs. 5,10,000/- and salvage value 10,000 and estimated life 12 years, the decision might to be allocate Rs. 250,000/- over the first for four years of service life, 1, 50,000/- over the next four year of service life, and remaining Rs. 100,000/- over the last four years. This method of depreciation is both arbitrary and highly subjective. The major objection to a subjective, an assignment of service cost is that if may be employed to deliberately show reported. Income as a mere estimated and since the groups, primarily by various business have

conflicting interests there is some advantage in being arbitrary in a systematic manner

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(iv) Diminishing Rates on Cost Method: -

This method is arbitrary in the selection of the rate therefore; no formula can be given for determining the rates. The rates are chosen arbitrarily when the depreciation programme. is set up. The base and the cost, remain fixed while the rates choose arbitrarily and applied to cost each year. This being so the method has no logic or reason behind it, it is suitable for those assets, where belief is held that depreciation should be small in the early years and larger in the later years the changed this method is substitute for the fixed percentage on diminishing value method.

(v.) Straight-line Method with Rate Change: -

Another method of obtaining a higher or a lower rate of depreciation in the early years as compared with the later once is to use two different straight-line rates of depreciation during the life of the asset.

For example- Two thirds of the depreciating value of machine may be depreciated in one half of its life the life of machine may be assumed at 10 year's and cost of machine may also be assumed of Rs. 150,000/-

First five-year annual charge: -

$$= \frac{150{,}000 \times 2/3}{10/2} = 20{,}000/-$$

Second five year annual charge:-

$$\frac{150{,}000 \times 1/3}{10/2} = 10000$$

Total depreciation for first five year 5 x 20,000 = 100,000

Total depreciation for second five years	5 x 10,000	= 50,000
Total depreciation		= **150,000**

(vi) Sum of The Year's Digits Method of Depreciation: -

A similar method of computing depreciation which result in declining amount of depreciation charges each year of on depreciable asset useful life is the sum of the years digits method. This method dose not require a salvage value like the declining balance method, this method assigns depreciation to each accounting period in proportion to the number of years of an assets useful life, which remains at the beginning of the current year the number of each year are added together e.g. years 1,2,3,4, = 10. The sum of digit is always equal to n (n+=)/2 in the above depreciation is charged at 4/10, in the First years, 3/10 In the Second year, 2/10 In the Third year & 1/10 In the Final year.

This method's formula is:

$$\text{Year's Depreciation} = \frac{\text{Number of Year remaining}}{\text{Total digital salvage Years of life}} \times (\text{Cost- selvage})$$

This method is called "the sum of the year digit method" because the annual rate is calculated through the use of number of years in the estimated life of the asset, the number of all the years are added to from the denominator of a fraction and the digit of each year is used as the number of the fraction applied for that year to the cost less scrap value of the asset the fraction are applied in the reserve.

The result obtained by the use of the sum of the year digits method account particularly the same as those obtained by the use of reducing balance method, but the sum of the year's digits method is less

difficult to apply. Under this method the annual depreciation is that proportion of the total depreciation, which the year that the asset has yet to live plus one, bear to the sum of years digits. It may be applied to all type of depreciable assets and yields periodic charge similar to those provided by the declining balance method. This method is likely to be particularly useful where style or fashion has much to do with the value of the assets.

3. Increasing Charge Method: -

In practice, depreciation is seldom assigned to the successive period of service life by an increasing charge formula, such a procedure it's regarded as non conservative, specially for higher risk investment in specialized plant assets. There is added objection that where maintenance costs tend to increase an installation ages the combination of increasing depreciation and increasing maintenance, unduly burdens the latter years of service life. In its most familiar form the method assumes, in fact that the contribution of the assets to revenue remains constant period-by-period thou out service life and that the expenses other than depreciation are also relatively stable. This condition is seldom fulfilling except in special case of leasehold property. The tax considerations have tended to suppress interest in these methods although in the past tax increases have sometimes more the all offset the effect of interest taken into account.

4. Interest Method: -

Depreciation and interest are physically in separately. Both of them are relate with time. However, one can not be replaced by the other the best example to take in clearly one in which the depreciation is wholly and solely due to passage of time so that there is no qualities deterioration

to fag the relation between depreciation and interest which also depends entirely on the passage of time.

(i) Annuity method: -

In the annuity method, the cost of asset, as also equal installment unit and the book value of asset thereon writes down the interests annually is reduced either to zero or its residual value at the end of its usefulness to business. Annuity method is based on the present value approach to income determination, i.e., it allows for the time value of money and its advocates often argue for its adoption, Moreover, it tends to produce a reported income, which reflects a constant rate of return on the capital invested.

In this method it is supposed that money invested in the purchase of asset earns interest at fixed rate. The idea, under this method is that the expenditure on the asset is regarded as an investment earning a certain rate of interest, interest at a fixed rate is calculated on the capital outlay involved in the acquisitions of the assets on assumption that if the same amount of capital were employed in other investment it would have earned a certain rate of interest. The owner of the business utilizing any assets not only loses the original cost of the assets in the shape of depreciation, but also interest thereon. The cost together with interest on diminishing balance is written of the asset. this method can be used. Advantageously chiefly in respect of a long lease, which generally involves a considerable capital out-lay, because in these cases the interest earn in earlier years is not important. This method is equitable to subsequent years when repair charges are equal. In this method revenue account is debited for less and less amount year after year, because the rate of depreciation remains the same while the interest charges go on decreasing. It is not

otherwise popular because when the asset account is debited with interest, its value in the early years of its appear at high figure than its actual value. It will not be suitable for adoption in case of plant and machinery. As fresh calculations will have to be made each time when additions or deductions take place. This method is seldom if ever used in practice.

Under this method the assets is treated like an interest bearing investment. The money invested in the asset is retained in the business and is expected to earn interest at a fixed rate. Thus an amount equivalent to the estimated loss of interest is written off in the profit and loss account throughout the useful life of the asset. A certain fixed amount of depreciation is provided for every year as shown by the annuity table. The asset account is debited with interest at a fixed rate. A fixed sum is written off the asset account so that the values of the asset plus intrest come to nil at the end of its working life

This applied in case of assets, which have a definite span of life like lease, for assets to which additions are made every user it is not to much value hence this method is not much popular.

This method assumed that the amount of capital invested in the fixed assets would have earned interest had it been invested otherwise. This method is a constant proportion of the aggregate of the interest at the specific rate on written down value of the asset at the beginning of each period.

Example -	Cost of the asset (c)	Rs. 100,000
	Life of the asset (n)	5 years
	Rate of interest (r)	10%

Depreciation to be charged is calculated as below

$$D = \frac{c \times r}{1 - \frac{1}{(1+r)^n}} = \frac{100{,}000 \times 0.10}{1 - \frac{1}{(1+10)^5}} = 26380$$

Table No.3.1

Depreciation Charge by Annuity Method

Year	Cost/WDV Rs.	Interest Rs.	Total Rs.	Depreciation	WDV.c/fd
1	1,00,000	10,000	1,10,000	26,380	83,620
2	83,620	8,362	91,982	26,380	65,602
3	65,602	6,560	72,162	26,380	45,782
4	45,782	4,578	50,360	26,380	23,980
5	23,980	2,400	26,380	26,380	NIL

The amount of depreciation is very high under this method and covers the opportunity cost of non-investment of the capital anywhere else.

(ii) Depreciation fund method: -

This method is also called the, 'Redemption fund method' 'Amortization fund method' or sinking fund to replace a depreciable asset. When one time writes off depreciation, one make sure that sufficient assets are retained in the business to replace the asset unless the proprietor draws out more than warranted amount by the figure of his net profit. Under the above method, however readily cash may not be available, when the time

for replacement comes the amount for depreciation may be dispersed. In all sorts of assets making it difficult to be buy a new assets in place of old one. It is good to provide funds for replacement of assets at the end of its life in such a way that the entire burden of the replacement does not fall on one year, it is necessary to set a part of a fixed amount every year out of the cash for investment in securities

Under this method such a sum as debited to depreciation account and credited to depreciation fund account, which if invested in gilt-edged securities from year to year, during the life of the existing asset, will accumulate at compound interest to a sum required to replace the original asset, at the time when it become useless the amount of annual depreciation can be obtained from the depreciation fund table or with help of logarithm table.

This method is also known as depreciation fund method or 'Reduction fund method' or Amortization fund method: According it a depreciation fund is in other words under this method created every your and credited with the amount charged to the profit and loss account simultaneously, an equivalent sum is invested outside the business to asset remains at its original cost in the books of account. The installments are fixed in a way so that the whole investment accumulates at the compound interest and provides a sum equivalent to the replacement cost the asset at the end of working life.

Thus the asset is written off after a fixed interval of time and the money is available to replace it at the end of its useful life the cash is usually invested in gilt-edged securities. Thus under this method no

inconvenience is caused to the business. Money becomes available from outside to replace the asset after the expiry of its working life.

Example - Cost of the asset (c) 100000
Life of the asset (n) 5 years
Rate at interest 10%

Dep. to be charged is calculated as below: -

$$D = \frac{c \times r}{(1+r)^n - 1} = \frac{100000}{(1.10)5 - 1} = 16380$$

Table No.3.2

Depreciation Charge by Fund Method

Year	Bal B/fd	Interest Provision	Annual Dep.	Annual Investment	Bal c/fd
1	-	-	16380	16380	16380
2	16380	1638	16380	18018	34398
3	34398	3440	16380	19820	54218
4	54218	5422	16380	21802	76020
5	76020	7600	16380	23980	100,000

Production Method: -

Several depreciation methods have been designed to attempt to charge accounting period with expired cost in production to the use of fixed assets. These methods are referred to as production or out-put method. when the life of the asset is more a function of activity or use than the time, the appropriate measure of depreciation of the asset value may be the

number of items produced by the asset or the this method the asset is assumed to produce so may units of the product and each product is charged with the proportion of the total estimate depreciation which the units produced during the period bear to the total estimated out-put.

The service benefits may also be thought of as contributions to revenue or cost reduction resulting from the asset, although such benefits are usually difficult or impossible to trade. The production method is peculiarly suitable to the depreciation of the asset for which the total service unit can be rather definitely estimated and when the service is not uniform by period to period. Methods of this type are feasible when the life of an asset depends almost entirely upon use and when both the total useful life and the part of the life expiring each year can be measured in terms of a standard unit of activity. Other forms of the production method state useful life in terms of units of product made by the asset, or in revenue rupees resulting from the product.

In budget the depreciation charges for year, the number of unit to be produced during that period will have to be estimated the formula for calculation the depreciation per unit can be expressed in the following manner:

$$\text{Depreciation charges Per unit} = \frac{\text{Cost of Asset - Salvage value of asset}}{\text{Unit of productive activity}}$$

Example.

Cost of the machine	-	2, 20,000
Estimated scrap value	-	20,000
Estimated number of unit to be Produced		1,00,000

Rate of depreciation per unit = $\frac{2,20,000 - 20,000}{1,00,000}$

= Rs. 2

It in a particular year 7000 unites are produced the depreciation to be charge will be: -

7000 units x Rs 2 per unit = Rs 14,000

This method gives more stress on usage factor rather than time factor. Higher the number of unit-produced ligher is the amount of depreciation and vice versa.

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This method is based upon the assumption of the depreciation is strictly a function of use and that the passage of in itself is not relevant to the depreciation process the yearly provision for depreciation. It is directly related to the number of units produced during the period and the accumulated depreciation increase in direct proportion to unit s produced during the period. The carrying value decreases in direct proportion to the-unite produced during the period. The production method must be confined to those assets whose useful life is determined by the factors of wear and tear. Where the extent of use the rate of a production measures the rate of exhaustion of property. For most of the property, it is not possible to obtain this information with any degree of accuracy and therefore, the method is not considered in acceptable one for general application to the machinery account of industrial concerns or the property of those companies exploiting natural recourses with reserve sufficient to expend operations beyond the physical life of the original plant if we accept the argument that the periodic depreciation charges should reflect the availability of productive capacity and the periodic earnings are in part a function of the degree of succession is achieving full utilization over total economic case of asset for it is best

regarded as bundle of prepared services to be utilized as required as variable use charges appear entirely rational.

If a fixed assets is subject to obsolescence the production method appear to be illogical procedure for establishing a reserve intended to provide for path physical deterioration, obsolescence, because obsolescence presumably develops on a time rather than on the bases of units of out-put. During a period of small production, the depreciation charges might be less than the amount which should be provide for obsolescence on the basis of the lapse of time and this inadequacy might not be compensated for the period of large production. Further more, all productive factors of a business, not just fixed assets. Contribute to the earning of revenue and the individual contribution of each factor cannot be identified, there are some methods for providing depreciation, which are based on unit of production.

1. *Straight-line Method By Using Factors: -*

Under straight line method, service life of a depreciable asset, may be measured in either units of time or units of physical service or out-put in practice. The term straight line is commonly used with reference to the period of time, when service life of a depreciation asset is measured in units a physical out-put, the procedure is called the production or out-put method of depreciation, If under this method depreciation is computed on an out-put basis, the depreciation charges per year will vary in production to the number of hours run is each year similarly. If depreciation is computed using a straight-line yearly rate, the depreciation charges per machine hour will vary if the machine is run for different number of hours each year.

(ii) *Declined Unit Use Charge Method:-*

When a machine is older its production may be less valuable because of poorer quality of reduced demand for the product. A use charge on declined unit bases may then be appropriate the earlier units of production being charges at a higher rate, then later units produced when the machine is older.

(iii) *Working hour Method:-*

Under this method the assets is assumed to have a life of so many working or producing hour's and each of the period is charged with total proportion of the total estimated depreciation, which the hours that the assets is used during the period, bear to the total estimated working hour's. In budgeting the depreciation charge for a year, the number for productive hours, which each asset will be used during the period, will have to be estimated.

(iv) *Machine-Hour Method: -*

The total operating hours estimated for the duration of the effective working life of the machine or divided into cost of machine less its estimated scrap value. The results is an hourly rate for machine depreciation, However, its use is restricted is case of man made fixed tangible assets, because the service units to be obtained from a fixed assets or a group of fixed assets, during its service life can rarely be measured in actual practice. No depreciation is charged on idle assets despite of the fact that depreciation occurs even when an asset remains idle .It is also known as machine Hour method or efficiency Hour method or Unit at Production Method or Hour's Service Method. It is like the kilometer method with the only difference that the working life of the assets is calculating in terms of hours instead of calculating it in terms of kilometers. It is applied in case of

machine, the working life of machine, which can be measured in terms of hours.

This Method is similar to the Production Unit Method except that instead at number of units to be produced during the life of assets number of hours for, which the assets accepted to work is taken into consideration.

Example

Cost of Machine	Rs.	1,10,000
Estimated Scrape Value	Rs.	10,000
Estimated Number of hours		25000

$$\text{Rate of depreciation per hour} = \frac{1100{,}00 - 10{,}000}{25000}$$

$$= \text{Rs. } 4$$

If in a particular year, the machine works for 25000 hour's, the depreciation will be charged -

2500 Hours X Rs. 4 per hour

= Rs. 10,00

(v) ***Efficiency Hour Method: -***

It is counted in terms of working hours; this method is used for costly machines, where o fair estimate of the life of the machine in terms of working hours can be formed.

(vi) ***Production Unit Method: -***

According this method the depreciation is calculated per ton according to the out-put of the year. Under this method a minimum annual

charges is sometimes adopted, irrespective of the fact, the production has not reached the minimum.

Revaluation method: -

Under this method the asset is valued at the end of each year when the balance sheet has to be prepared and the fall its value is charged as depreciation occasion are rare on, which their are profit on revaluation assets are usually revalued by technical experts. Their value is determined as the value to the business as a going concern. This method is useful in case of assets such as horse patterns. Models desing patterns, trademarks etc. it is the most scientific method of the calculating depreciation.

According to this method the asset is revalued periodically, the amount of depreciation for the period is the difference between the cost of the period and the amount of revaluation to the end of the period. Many persons call it appraisal, inventory or annual valuation method, where any mathematical basis of depreciation is not possible. The assets are revalued at the end of financial year because it is not possible to estimate the life of such assets with any precision. This method equates depreciation with the loss of asset value and in effect involves a determination of the value that remains in the asset at the end of each period expired. The difference between the book value of such assets and the value after revaluation is the measure of depreciation, if the valuation exceeds the book value, the difference is not taken into account the method must be according to " going concern". This method equates depreciation with the loss of the asset value and in effect involves a determination of the value that remains in the asset to the end of each period rather than the service value that has expired. Valuation is done by some one having knowledge of the asset.

It is useful however in valuing fixed assets like small tools, live stock patents, copyrights and another assets of this nature, which are constantly changing and those period of life is most uncertain. This method is used only in case of hotel lines, ready movable from place to place. Where it may be to much to maintain accounts of each single items in which breakage, and theft rather than usage of time are the effective factors of depreciation. This method is suitable for depreciable assets, jars, bottle, Packages, Horses, Castles, patterns, models, trademark and Investment. It is also useful where a percentage rate of depreciation would be difficult to apply accurately and where no other method can be employed to secure satisfactory result at the end of each financial period this method is useful for depreciating loose tools of Jute Industry.

Other methods: -

Following are some other methods of calculating the amount of depreciation, these are following: -

(i)Endowment Policy Method: -

This method is know Insurance policy method under this method, the fund instead of being Invested in gilt-cadge securities, is applied in taking out an insurance policy so that after the aping of working life of the asset of the insurance company pay the sum assured to replace the asset. This method is superior to the depreciation fund method, there are little chances of loss on realization. However, it is more expensive and it is not applicable to asset, whose life cannot be calculated and determined precisely.

This method similar to sinking fund method under this method an insurance policy is taken out for the amount required to replace the

assets at the end of life of the asset, the amount of depreciation to be charged is equal to the annual premium payable on the insurance policy, which is decided by the insurance company.

(ii) *Job Method: -*

Wherever special equipment is purchased for a particular Job or contract the difference the cost and salvage value of such equipment is charged as depreciation against the Job or contract for which it is purchased such a method of calculating depreciation is often referred to as the Job method.

(iii) *Combination of Time And Depreciation: -*

It is possible to estimate the percentage of depreciation of assets, which is a function of time and the percentage. Which is a function of usage and then a combination of some of the method is used for example, if the depreciation of a machine is judged to have caused 40% by usage and 60% by the passage of time.

(iv) *Equation of Cost And Repair Method: -*

Under this method, the estimated total cost of repairs is added to the value of the asset and a fixed amount is debited to profit and loss account each year throughout the life of the asset to cover both depreciation of the asset and repairs as the actual repairs are effected the cost of these will be charged against the provision. It is cause, extremely difficult to estimate future repairs and for this reasons this method is of little use.

(v) *Depreciation Based On Average: -*

When depreciation is computed on the basis of a composite group for assets of different life spends, it is necessary to develop a rate based on

average. Computing the annual depreciation for each item in the group and dividing the total cost of assets may do this.

When composite rates are used they may be applied against total asset cost on a monthly basis or some reasonable assumption may be made regarding the timing of increases and decreases in the group. A common practice is to assume that all additions and retirements during the second half occurred on the first day of the following year.

(vi) ***Depletion method: -***

In the case of wasting assets such as mines and quarries depreciation is usually provided by "depletion method" which means that such a sum is provided each year for depreciation as represent the expired capital outlay on the basis of output compared with the total estimated contents as the mines. This method provides that amount should be written at in the production account each year according to the number of unit actually obtained.

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(vii) ***Retirement or Replacement Method: -***

Under this method the cost of plant units less salvage is charged to expenses in the year in which the assets is retired from service. Under the replacement method, the Original cost of fixed assets is retained in the assets account and the cost of all replacement is charged to expenses when new fixed an asset is acquired. The replacement is some what analogous to the use of life in costing inventories in that assets account will always reflect the cost of the first unit of each type of property acquired by the company. Under the retirement method, the properly account will show the cost of facilities actually in use.

The method is strongly advocated by some public utility companies in an economy where there is good deal of inflation as asset may be purchased to day at a certain price, its estimated life being say ten years. At the end at 10th year the cost of replacing the assets may increase by say 75%. Now if depreciation is charged on the basis of original cost, there might be difficulty at the time of replacement of assets, because the depreciation charged on the basis of historical cost is not sufficient to cover the full replacement cost. Under these circumstances this method followed by some accountants.

This Method does not confirm to good accounting practices and is criticized on the grounds that no depreciation will be charged against revenues, until the first retirement occurs. Not only is the income misrepresented in the early years of service life, but at all time the full investment in the productive facilities will appear on the balance sheet despite of the fact that portion of service life has expired.

(Viii) ***Global Method: -***

Under this method all the assets are grouped together and a flat rate of depreciation is charged. This method is very unscientific and should and should not be adopted. It is not permissible under the Company Act of India.

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(ix) ***Examination Method: -***

In this method the total depreciation accrued as of a particular date can be determined by physical examination of the assets. This method has serious objections especially as a means of determining successive periodic charges. The physical condition of an asset often gives no clue of the extent of elapsed service life. This method throws light on the question

of remaining life on a physical basis but it is inadequate as a means of recognizing the impact of obsolesces and other non-physical factors. For many kinds of depreciation assets, no method of examination is available which will furnish reliable evidence of either expired or remaining life.

(x) *Statistical Method: -*

Some persons recommended from time to time for the adoption of depreciable rate represented by various well-known curves including the vertical parable the logarithmic curve, the ellipse, the horizontal parabola, the cubic parabola and on this assumption it is argued that as possibly no single curve represents the manner in which depreciation occurs, the problem should be solved by the adoption at several cures it is obvious that such methods would give no useful results.

(xi) Renewal Method: -

According to this method the full cost of the assets is charged as depreciation during the period in which assets are renewed. No depreciation charged between the periods. This method at changing can be used if the asset is of small value and is renewal frequently: -

1. In spite of the fact that their are various method available for calculating the depreciation, the final choice of the method depends upon the individual organization. It should be noted that Income Tax Act, 1961. Which is a very important piece of legislation applicable to all types of business organization recognizes only one method for calculating the depreciation i.e. written down value method. The rate at which the depreciation is to be calculated is also specified in the Income Tax Act 1961. If the organization wants to calculate the depreciation on some different basis or at some different rates, it can do so for financial

accounting purpose. However, for calculating the tax liabilities the depreciation has to be calculated on written down value basis and that to at the specified rates.

2. The company form of organization to home the provision of Companies Act 1956 applies are reused to calculate, the depreciations per the provision at schedule (xiv) at the companies Act 1956 the salient features at schedule (xiv) at the companies Act 1956 can be stated as below:

a. Schedule (xiv) the Companies Act, 1956 provides that the company can calculate the depreciation by using other written down value method or straight line method. The companies are given the choice to select between these two methods. The actual choice of the method may depend upon the effect on the profitability of the company. If the company wants to change the method of calculating the depreciation, it amount to the Change in accounting policy. Any change in the method of calculating the depreciation has to be effected with retrospective effect from the date of in corporation of the company. The company is required to disclose the fact of change in the method of calculating depreciation, while preparing its financial statement a long with the effect of change in the method of calculating depreciation.

b. The Rates at which the companies are required to calculate the depreciation are also spaced in **Schedule xiv**. For this purpose, the fixed assets are classified in various categories the broad categorization of the fixed assets as below: -

Building: - Factory building as well of Administration building.

Plant and Machinery: - Computer Installations, Furniture, Vehicles,

The Rates for Calculation at depreciation are as below: -

Table No-3.3

Various rate of depreciation (In percentage)

Nature of the fixed assets	WDV	SLM
Building Factory	10	3.63
Building Administrative	5	1.63
Plant and Machinery	15	4.75
Furniture	10	6.33
Vehicles	20	9.5
Computer Installation	40	16.21

c. If during the financial year any addition has been made to any asset or any asset has been sold, the depreciation on such assets will be calculated on a prorate basis from the date of such addition or unto the date on which such assets has been sold. Their is some of the questions, which are normally, rise in respect of the nature of depreciation.

(xii) Compound Interest Method: -

This method is usually adopted for charging depreciation on fixed assets of the electric supply undertakings. It is like the depreciation fund method with the difference only that investment are not made out side the business and the interest is also calculated on the increasing balance of depreciation each year. The depreciation provided for each year is also adjusted that it becomes equivalent to 90% of the value of the assets accumulated at the rate of 4% per annum compound interest. These methods enable to retain enough of the working capital in the business. It involves no risk of loss on realization as in the case of the depreciation fund method.

(xiii) Use of Kilometer (Mileage) Method: -

This Method is simple in nature but difficult for adoption in practice. it is adopted in case of assets whose use may be measured in the term of kilometer, e.g. cars, Trucks, Buses, Motorcycles, etc.

For example, If a Car costing Rs. 40,0000 is estimated to run for about 16,00,000 kilometer on average, it rules for about 160,000 kilometer each year. It will be value less after the expiry of 10 years, but if it runs 320000 km. in the first year 240,000 km. in second year. 28,0000 km. in the third year and so on... Charged calculated at the rate at 25 Paise per Km the depreciation will be Rs. 80000, 60000, and 70000 respectively.

(xiv)- Single Charge Method: -

In it a fixed sum of money equivalent to the amount of depreciation and repair over the working life of the asset is charged to the debited of the profit and loss account and credited to depreciation and repairs reserves account. Repair affected in the following years, are charged to this account.

Criteria for Judging Depreciation Method

The criteria for judging depreciation method are as follows. : -

(A) An objective evaluation of the following factors should be carried out: -

- **(a)** Relationship between decline in market value and use at the assets.
- **(b)** The effects of obsolescence's
- **(c)** Expected pattern of repair and maintenance.
- **(d)** Anticipated of decline in operating efficiency.
- **(e)** Expected change in revenues.

(f) Time factor, short life or long life of asset, need for considering interest factor in the case of long life of high value asset's life.

(g) Degree of uncertainly regarding the later periods of the asset's life.

(B) Determine the most dominant factors out of the above checklist.

(C) Select a method of depreciation, which answer to most dominant factor most closely. This exercise will require joint efforts on the part of engineers, economists and accountants. The government at national level to carry out this excersise industry wise, major asset-wise and particular may constitute independent expert groups

Method of depreciation by prescribed for specific industry or for major assets groups or specific asset. An individual firm/company must be compelled by law to adopt methods any one of the following alternatives

(i) Use of revolution method.

(ii) Equal allocation (use of straight-line method).

(iii) Neutral or sterilized allocation based on revenue/net contribution.

(iv) Presentation of fund flow and cash flow statements instead of profit and loss/revenue statement.

Comparison of Methods: -

Various method of charging depreciation followed by a company will have quite different effect upon the finance of the company. No one method of depreciation will ever satisfy all persons and no one method exists or will be designed which will apply equitably. To all the diverse kinds or fixed assets an appraisal of methods frequently develops into an arguments in which personal preferences are emphasized. Practical operating conditions in any one plant should be the primary force in

arriving at a decision concerning the correct method to adopt under those given circumstances.

The materiality of deference in the effect of various methods of computing depreciation upon the measurement of income and financial states depends upon (i) the amount of deprecation relative to other expenses and to revenue, and (ii) the amount of depreciable asset in relation to total assets. The difference resulting from alternative depreciation method and be great because of the long life of many depreciable assets. Cumulative differences between methods can become significant over long period.

The Principle difference among depreciation methods are (1) the units in which they express the estimated useful life of the asset, and (ii) the manner in which they determine what fraction of the useful life expires during each accounting period. The units in which the length of an assets life is expressed may be calendar years. Units of service or output or a combination of the asset to be allocated to any accounting period is proportionate to the fraction of the assets useful life, which expires during that accounting period.

Some types of assets are subjected too little technological change wear and tears are the most important determinants of their useful life. For others wear and tear has little effect on the economic life of the asset. The particular conditions affecting each asset should be considered in estimating its total useful life and the fraction of its life, which expires in each accounting period. These characteristics are very important in selecting the appropriate depreciation method. The different in the results of the above method will vary when applied in particular situations depending upon the length of life and the scrape value of the depreciable assets. The

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results and effect of above depreciation methods have been summarized as follows: -

(a) The fundamental assumption in the time method is that the decrease in the method is that the decrease in the value as well as the ability of the company to bear the burden is fixed and determinable in relation to the passage of time. The straight-line method based upon the expiration is its basis; fluctuations in operating conditions do not receive any consideration. This method gives a constant amount of yearly depreciation expenses, which is a constant percentage of the unexpired cost of the depreciable asset. The percent of annual depreciation on the un-expired cost of the depreciable assets at the beginning of each year, which increases sharply until the balance, are reduced to scrape value of assets. This method give satisfactory results, where depreciation is controlled primarily by inadequacy and obsolesces or any other time factor and where severity of usage is that fact that this method should be used for land, building and for leasehold property of cement industry because these assets are depreciated due to passage of time and rate of depreciation is also constant for year to year.

(b) Decreasing charge method and the sum of the year's digits methods are objective and are fairly simple to apply. These method are more appropriate for assets whose service benefits decline with age whether the rate of decline is most similar to that produced by the uniform rate method or the sum of year's digits method or whether it neither resembles nor depends upon the characteristics of the particular asset in question. It has been suggested that these methods can be used for depreciating furniture and fixtures of cement industry these methods can also be used for depreciating those plant and machinery that cannot be linked with

production say machinery used in office of depreciation recommended by independent expert groups. No change of method of depreciation should be allowed unless it recommended by such independent expert groups constituted by the government.

(c) Whenever the independent expert group allows change at method, it should be introduced with prospective effect only. In no circumstances, post year, excess depreciation charge should be allowed, to be credited to profit and loss account of the current year.

(d) In extreme cases where the independent experts group feel that objective selection of an appropriate method of depreciation is not possible or practicable it may recommended.

The working hours method is used for distributing depreciation on the basis of the hours of operation prorates the cost of an asset to production in much more equitable fashion than does the straight-line method. If with the passage of time obsolesces and inadequacy are not vital factors of depreciation and method can be used. This method is regarded as the most suitable for depreciating plant and machinery of cement industry. This method can also be used for writing of motor vehicles of cement industry.

The composite life method is not recommended for purposes other that a check upon the general adequacy of the depreciation provided under the straight line or any other method in use. The sinking fund and annuity method is good for the cement industry; because both these method are based upon right assumption that is to say that it taken interest into accounts. One method may be considered more useful for one enterprise, which another may be more satisfactory for a concern operating under

different circumstances. The nature of the assets involves consideration in deciding on the method of depreciation appropriate in each use. The committee of the American Institute on terminology for 1945 on depreciation states that any method to be acceptable, must provide for the distribution of the estimated total depreciation cost during useful life of the asset to which the amount relates in a systematic and equitable manner, recognizing the validity of different method used under varying circumstances of business operations. It is therefore, necessary to unsecure a high degree of comparability of accounting data from period to period for each industry concern.

Where services like can be measured in physical units of output or working hours, the method based on out-put should be used if obsolescence's is not an important factor and repair & maintenance cost and revenues are proportional use. Where serviceability is a fluctuation of time rather than use, repairs and maintenance cost operating efficiency and revenues are relatively constant over the estimated service life. The choice should undoubtedly fall on straight-line method. Declining charged method may be used only when operating efficiency or revenues are expected to increase at the same time. The fundamentally argument in favor of any reducing charge method is the equalization of depreciation and maintenance over the life of the fixed asset. If obsolescence factor is important, decaling charge method is good and prevents heavy losses due to premature disposition of the depreciable asset. Reducing charge method enjoys wide adoption because of above advantages. Imputed interest charges and notional interest income are not good for manufacturing concerns but these methods are favored for government undertaking, municipalities, etc. Compound interest method has not been found acceptable.

The above depreciation methods are proper, if they are properly use and no method appear to be more accurate then the other when adjustment are made in depreciation charges from period to period.

A Regarding Decision for the Choice of the Depreciation Method

For tax purpose the best method is that which minimizes the effect of taxes. The Depreciation methods are not only method for allocating the cost of depreciable asset to period. There may be other method by which a business organization may choose a suitable method. According to its need and purpose, but the management must take into account the factor like-constituency suitability, purpose orientation, cost variability etc. in selecting a suitable method.

Depreciation essentially is a process at allocation of the historical cost over the service potential of the assets. The income tax law actually prescribes the depreciation percentage, however, under the Companies Act, 1956(Sec. 205) says that freedom is given to the companies to follow in income tax percentage or such a percentage. Which would results in equitable distribution of the cost of the assets over its effective life. Some companies resort to change method of depreciation from the diminishing balance method to the straight line method with effect from back date, which results in generation of book profit which may be used as the device for issue of bonus share or payment of divided in lease yearly. This opportunities device is not a sound policy.

Chapter – 4

Depreciation Policy in Actual Policy

- Formulation of depreciation assets policy
- Periodical review of depreciation policy
- Components of depreciation policy
- Replacement of fixed assets
- Financing of fixed assets
- Record of depreciation and fixed asset

CHAPTER – 4

Depreciation Policy In Actual Practice

Depreciable assets are heart of cement factories of Madhya Pradesh. Once a decision is taken about the depreciable assets of a cement company or a policy is framed about the depreciable assets of cement factory, it will effect the whole life of the cement company, not only one or two years as in the case of other business decisions of policies. In present time it is important to have a suitable depreciable assets policy to run the cement company in a profitable manner. Thus, it is the primary duty of the management of Cement Company to follow a suitable depreciable assets policy keeping in view the following important objectives:

(1) Recovery of the original investment in fixed assets i.e., the acquisition cost of a fixed asset before the expiry of the economic life of that fixed assets.

(2) Ensuring a uniform rate of return on investment in fixed assets.

(3) Generating sufficient funds for the replacement of the fixed assets after the expiry of their economic life.

(4) Deriving maximum tax benefit.

(5) Ascertainment of correct profit and loss of a cement company.

When I asked a question, what are the important objects of depreciable assets policy to the management of cement companies of Madhya Pradesh, they replied as given in Table No.4.1.

Table No - 4.1

Important objects of depreciable assets policy of selected Cement Companies

Name of units	Chief Objects.
• ACC Ltd.	Determination of correct profit and loss, uniform rate of return, generating funds for replacements, to adopt latest Technology.
• PRISM Cement	Ascertainment of correct profit and loss, recovery of original Investment, Deriving maximum Tax benefit to adopt latest Technology.
• Birla Corporation Ltd.	Ascertainment of correct profit and loss, Recovery of original investment. Deriving maximum tax benefits for better repair and maintenance to adopt latest Technology.

When we study the above table we find that two units are showing recovery of original investment as important object of depreciable policy & stating of deriving maximum tax benefit as important object. One unit maintaining uniform rate of return on investment as important object, one unit giving generating sufficient funds for replacements as important objects other two units showing ascertainment of correct profit and loss as

important object, all units suggest to adopt latest technology as important object and maintaining for better repair and maintaining as important object of depreciable assets policy of cement industry of Madhya Pradesh.

Formulation of depreciable Assets policy:

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It was observed that numbers of factors were affecting formulation of depreciable assets policy in direct and indirect way. The factors affecting formulation of depreciable assets policy of cement industry of Madhya Pradesh are given Table No .4.2

Table No. 4.2

Factors affecting formulation of depreciable assets policy of selected cement companies

Name of Units	Factors
• ACC Ltd.	Records relating to depreciation and fixed assets, changes in demand, addition and betterment, depreciation policy.
• Birla Corporation Ltd.	Life of fixed assets, repair & maintenance, obsolescence, replacement cost of fixed assets, engineering investigation, past experience and future expectations, periodical review of fixed assets.
• prism Cement	Records relating to depreciation and fixed assets, depreciation policy, inadequacy change in demand, addition and betterment, development of improved facilities.

Periodical Review Of Depreciation Policy: -

Periodical review of depreciation policy of cement industry is essential for the purpose of comparison. Without periodical review of depreciation policy is meaning less and useless. Revision of calculated scrap value of fixed assets and determine the life of fixed assets by experts and engineering, investigations or estimates are must in present economy. So, a periodic review of depreciable assets policy at least once in two or three years should be undertaken. The depreciable assets policy may also be changed on the ground of technical reason i.e. new technical know-how, obsolescence, change in fashion etc.

Now it can be calculated that depreciation policy in the various cement companies of Madhya Pradesh requires revision from time to time in the light of changes in present position, maintenance expenditure and curtailment due to excessive use or obsolescence not allowed at the time of original estimate of fixed assets. In England life insurance company is completed by English Law to have such revaluation in every five-year's. It is good to revise the estimated life of a fixed asset, so that corrections, in the estimates may be reflected in the revised depreciable assets policy. The companies act of our country should be so amended as to enable our cement industry to revise its depreciable asset policy at least one-third of their fixed assets every year. It will thus lead to revision of whole depreciable policy at least once every three year's. This suggestion will greatly benefit those cement companies of our state, which are old. For newly established cement companies it would be better, if they revise their depreciable asset policy after two or three year's it is good if depreciable asset policy should be

periodically re-newed on the basis of statistical analysis and engineering estimates made on the basis of won experience. The information regarding the periodical review of depreciable assets policy in cement industry of Madhya Pradesh is given in Table No.4.3.

Table No. 4.3

Periodically review of depreciation assets policy in selected cement companies in M.P.

Name of unit	Review undertaken	Periodically
ACC Ltd.	No	Regular
Prism Cement	Yes	Irregular
Birla Corporation Ltd.	No	Regular

A depth study of table No. 4.3 shows that two units out of three units have review their depreciable assets policy periodically. Out of these, but remaining one unit undertake review only on ad-hoc basis.

Components of Depreciation Policy:

Components of depreciation policy of cement companies are many, such as service life of depreciable assets, scrap value, diminishing cost, maintenance and repairs, obsolescence, etc. It is found on personal inquiry that cement units under study have only three important components in this regard. These are service life of fixed asset scrap value of fixed assets and diminishing cost of fixed asset as is clear by Table No. 4.4.

Table No. 4.4

Components of depreciation policy formulation by selected cement companies in M.P.

Name of unit	Service life estimated	Scrap Value estimated	Adjustment made for dismantling cost	Alternative followed
ACC Ltd.	No	No	No	legal provision
Birla Corporation Ltd.	No	No	No	legal provision
Prism Cement	No	No	No	legal provision

In present economy formulation of fixed assets policy is affected by some major factors. So formulation will be prepared very carefully by various authorities of cement industries of m.p on corresponding inquiries, it was found by me that out of three companies in two units no service life estimated and in all units, no scrap value estimated and no adjustment made for maintaining cost. All write used legal provision on the basis of alternative way engineer and financial executives have participated. The chief accountant has participated in one unit.

Planning for depreciable assets:

Planning for depreciable assets is a must in modern industrial set-up of Madhya Pradesh that each and every production function is performed with the help of machines. The area of planning is not only limited up to purchase of depreciable assets, but it is also cover area of use as well as disposal and

replacement of depreciable assets. It was found in present study that planning for depreciable assets covers following areas as in clear in Table No. 4.5

Table No. 4.5

Planning for depreciable assets of selected cement companies in M.P.

Name of unit	Area covered
• ACC Ltd.	Purchase of fixed assets, use of fixed assets, replacement policy.
• Birla Corporation Ltd.	Purchase of fixed assets, financing of fixed assets, insurance policy, use of fixed assets.
• Prism Cement	Purchase of fixed assets, disposal of fixed assets, use of fixed assets.

The Table No. 4.5 shows that planning for fixed assets covers relating to:

1- Purchase of fixed assets.
2- Use of fixed assets.
3- Financing of fixed assets.
4- Repair and maintenance of fixed assets.
5- Replacement policy.
6- Insurance policy.
7- Disposal of fixed assets.

The detail study of above table no.4.5 concludes that planning for fixed assets generally covers purchase of fixed assets and use of fixed

assets, because these two areas are indicated in all the 3-cement companies of Madhya Pradesh.

When I asked a question about the designation of the officers who participate in planning for depreciable assets policy of their units, they replied that managing directors, secretaries, engineers and accountants are generally taking part in planning for depreciable assets, as is clear in Table No. 4.6.

Table No. 4.6

Designation of officers who participating

Planning for depreciable assets of selected cement company in M.P.

Name of unit	Designation of officers
ACC Ltd.	Managing director, Secretary, Chairman, Production manager, Chief engineer, Head of Deptt., Nominee of workers.
Prism Cement	General manager, Board of directors, Head of Deptt., Chief engineer, Factory manager, Financial officer
Birla Corporation Ltd.	Board of directors, Chief accountant Chief executive, Head of Deptt.

The study of table no. 4.6 shows that even in single case the nominee of workers participating for planning of depreciable assets. it is suggested that nominee of workers must participate for planning of at least such depreciable assets which affects safety of workers. The name of engineers are varied from one unit of another i.e., chief engineer,

production engineer, mechanical engineer and plant engineer, same situation was observed in the name of accountants i.e., chief accountant, financial accountant and cost accountant, it is suggested that following persons must participate in planning for fixed assets.

1- Managing Director/General Manager
2- Secretary
3- Chief Engineer
4- Chief Accountant
5- Factory Manager
6- Production Manager
7- Repair and Maintenance Manager
8- Nominee of worker's
9- Finance Officer
10- Head of Department

Service life of Fixed Assets: -

The depreciable assets policy depends to a large extent on the estimated life of the fixed assets. For some fixed assets two types of lives are estimated, i.e., (i) legal life or physical life and (ii) Commercial life. The following points are also taken into consideration while estimating the service life of fixed assets:

(i) Conditions under which it is used:

The use to which a fixed asset is put to use affects its service life. Many fixed assets can be put to alternative uses and are used under varying conditions. For example, the life of

delivery equipment will vary with the weight carried and the mileage covered by that delivery equipment. Usually continuous operation of a fixed asset at a high speed will shorter its service life.

(ii) The general maintenance policy:

If a fixed asset is kept in constant repair by granting attention to small repairs and replacement of parts from time to time, it will enjoy a longer life than the one, which is constantly neglected. Usually more efficient production is attained by a liberal and far-sighted maintenance policy. Poton and Patan suggest that the proper level of maintenance activity is that which is most reasonable and economical in view of the cost of the property, the cost of up-keep, the cost of replacement, the typical conditions under which the operations are conducted and other important relevant factors.

(iii) Salvage value of fixed assets:

Consideration is also given to salvage value of fixed of that portion of the service life already expired and also of that portion of the cost previously recorded.

(iv) Engineering investigation of fixed assets:

Investigations of past service life and salvage affect engineering, accounting and statistical methods. The best possible forecast of the life of a fixed asset is made with the help of

engineering investigations of condition covering the design and employment of such plant in the past and the extent to which such conditions still prevail in that cement plant.

(v) ***Past experience and future expectation:***

The experience of the past so far as it is still pertinent, and the expectation of the future so far as it is presently determinant of a current rate of depreciation, is not lost sight off. There is unfortunately lack of independence given to our cement industry. In companies' Act and Income-Tax Act in the matter of estimating service lives and scrap values, of fixed assets, in financial and tax accounting, the Companies Act, 1956 and Income Tax Act, 1961 of India have considerable influence in the areas as they have also determined the length of lives of depreciable assets though there are several estimating lives of an asset. -

(i) Two selected cement companies are following the provisions of said acts while the Prism cement calculate service life of the fixed assets on the basis of technical estimate, while ACC cement calculate service life of depreciable assets on the basis of experience of other unit. The Birla Cement calculates service life of fixed assets on the basis of past experience.

(ii) There is no such cement company under my study who estimate the scrap value of fixed assets, because they are of the view that where depreciable assets are worn out

their value is negligible. Therefore, it is obvious that there is no such unit who makes any adjustment for dismantling and removal cost in estimating the scrap value of depreciable asset.

Basis of charge:

Every cement company charges depreciation on different basis and no any unit is bound to adopt a particular method for charging depreciation. In this regard, the actual practice by cement industry of Madhya Pradesh is examined. The information regarding this is given in the table no. 4.7.

Table No 4.7

Basis of Charge and changes made there in selected cement companies

Name of Unit	Old Basis	other adjustment
• ACC Ltd.	Historical cost	Increase and decrease to devaluation and revaluation
• Birla Corporation Ltd.	Historical cost	Do
• Prism Cement	Historical cost	Not Relevant

The Table No. 4.7 shows that all the cement companies' straight-line methods (S.L.M) have taken original cost as the basis of charge for depreciation. Adjustment for increase or decrease in foreign liability in respect of fixed assets cost due to devaluation or revaluation has been made by all selected companies in confirmility with the requirements of the

company act. No change in the basis of charge has been made during the period under study. However, where some fixed assets have been constructed, adjustment has been made in estimating cost of self-constructed fixed assets. Any cement company under study did not charge depreciation on roads though the basis of valuation of this asset varies from one company to another.

Replacement of Fixed Assets:

Due to development of new technology revaluation, increase in demand, a cement company also requires replacing their fixed assets at this reason. Besides this, another factor like increase in repair and maintenance cost, decline in the quality, obsolescence, price inflation, and some other reasons. Table no. 4.8 shows, which reason the cement units, replaced their fixed assets.

Table No. 4.8

Reasons for replacement of fixed Assets
(in selected cement companies)

	Reasons	Name of companies
1-	Increment in charges of repairing and maintenance	3
2-	Decline in the quality or quantity of service	2
3-	Availability of improved or more efficient assets	2
4-	Changes in quality	2
5-	Inadequacy	1

From careful study of above table it can be said that main reasons of replacement of fixed assets are repair and maintenance charges, more efficient plants in the market and decline in the quality or quantity of service, which is required in each company. Besides this I have found at the time of interview with management of cement companies that every company makes systematic economic analysis before taking major replacement decisions. The authorities and official staff who participate in taking replacement decisions have been given in the following Table.No.4.9

Table No. 4.9

Participating authorities in taking replacement decision

Managing directors
Directors
Secretary
Chief Executives
Head of departments
Financial exe
Chief accountants
Engineer

It is suggested in this connection that the following persons should also participate in making replacement decisions of cement industry of M.P.

1- Directors
2- Managing directors
3- Chief Accountant
4- Chief Engineer

5- Financial Executive

6- Cost Accountant

7- Technical Experts

8- Management Accountant

9- Chief Executive

10-Nominee of the workers unions

All three companies under study, two companies have regular and well systematic programmed to finance for replacement while remaining one company was found having no such programmed. The replacement of fixed assets in the under study is finance mainly from the concerning state finance corporation, other financial institution and IDBI and internal sources. In one unit finance for replacement is obtained from banks, deferred payments, and internal sources from financial institution. During the course of study it was also concluded that major replacement of fixed assets in the all cement companies were caused by such factors as lack of funds, increase in cost of replacement, modernization and rehabilitation and fear of take over by the Government.

Study follows a conservative dividend policy for providing the rise in replacement cost of their fixed assets. Such method as creating special replacement funds for charging additional depreciation in profit and loss appropriation account have not been adopted by any cement company selected for this study.

Addition and Betterments:

Expenditures which are directly related to fixed assets are often made during the period of ownership and use of such fixed assets at times other than the date of purchase, "Betterment may involve an extra-ordinary repair such as a major overhaul, which extends the service life of a fixed asset beyond the original estimate."[1] These expenditure are classified as capital expenditure. Expenditure for new or used fixed assets, additions to existing fixed assets, or betterments or improvements to existing fixed assets are capitalized. They should be debited to fixed asset accounts because they add to the total service rendering ability of the fixed assets. Some cement companies have charged to this expenditure to the separate accounts. Table n.o.4.10 showed the treatment of additions and betterments in different cement companies under study.

Table No. 4.10

Treatment of Additions and Betterments in selected cement companies

Unit	Added to original Asset Account	Charged Separate Account	Remarks
ACC Ltd.	Yes	No	
Prism Cement	Yes	No	
Birla Corp. Ltd.	Yes	No	

1- **Lanny M. Solomon, Richard J. Vargo, Richard G. Schroeder : Accounting principles, Harper and Row, publishers, New York, 1983, p. 413.**

The above table reveals that treatment of additional and betterment in studies cement companies in M.P., the amount of additional and all companies has debited betterment to original assets account.

Financing of Fixed Assets:

The policy adopted by the cement industry of Madhya Pradesh regarding financing of fixed assets is similar in all companies under study. The most important source of financing is Madhya Pradesh financial corporation. The second important factor is deferred payment system as is clear from the following Table No. 4.11

Table No. 4.11

Source of Finance used by cements units under study

Name of unit	Source of Finance
ACC Ltd.	Equity share capital, preferential Share capital, IDBI, ICICI, IFCI, LIC, SBI.
Birla Corporation Ltd	Unit trust of India, IFCI, IDBI, ICICI, LIC, SBI, Housing board, Urban development corporation, Deferred payment, Equity share capital, Preferential share capital and Debentures.
Prism Cement	UTI, IDBI, ICICI, LIC, Equity share capital.

The study of above table shows that in case of the Prism Cement of financing for assets are equity share capital, preference share capital and debentures, but at the present time Prism cement have no any type of debt.

Method of Depreciation:

After discussion of various method of depreciation for various fixed assets in proceeding chapter. It is now proposed to examine as to whether the financial accounting methods of depreciation followed by the selected cement companies under study are similar or not to those followed under other branches of accounting, e.g., tax accounting, cost accounting and management accounting. Further an attempt has also been made to try to examine the causes for changes made in the method of depreciation during the period under study. Following Table No. 4.12 gives the various methods of depreciation used in the different accounting areas of the cement companies under study.

Table No. 4.12

Depreciation methods used in different accounting area in selected cement companies

	Name of Companies		
	ACC Ltd.	Prism Cement	Birla Corp. Ltd.
Financial Accounting	S.L.M.	S.L.M.	S.L.M.
Tax Accounting	W.D.V.	W.D.V.	W.D.V.
Cost Accounting	S.L.M.	S.L.M.	S.L.M.
Management Accounting	S.L.M.	S.L.M.	S.L.M.

It is also reveals that the straight-line method of depreciation is very popular in financial, cost and management accounting in the cement companies under study. The application of straight line method in tax accounting is out of question of straight line method in tax accounting is out of question because written down value method is the only recognized method recognized under Income-Tax Act of India.

Now, the causes of popularity of straight-line method adopted in the selected companies of cement industry in Madhya Pradesh may be analyzed and examined. For this purpose, it is necessary to find out whether the said selected cement companies have changed or not the method of depreciating fixed assets during the past periods. The information collected in this regard has disclosed following:

1- The cement industry in Madhya pradesh is of recent origin and hence it has not faced any major problem of changing the process of depreciation accounting

2- Observation have shown that the method of depreciation and the process of depreciation accounting in Madhya Pradesh is governed by the law of the land and the laws prevailing for the time being in force have provided such a policy and method of depreciation accounting that the system seems to be applicable to all types of industries on a universal basis.

3- The cement industry in Madhya Pradesh has adopted the method and principles in such a fashion that the legal requirement can be fulfilled.

However, the cement companies, at the same time have given weight age to the financial considerations.

4- It should also be noted here that the cement industries in Madhya Pradesh have created a sort of simplicity in adopting the method of depreciation and hence it has been found that the system of "Equal charge" for all most all type of fixed assets has been adopted by the companies under survey.

Record of Depreciation and Fixed Asset: -

The maintenance of proper accounting record relating to depreciation and fixed assets by cement companies is computation of depreciation will not be forthcoming if a complete history of each item of fixed assets is not maintained. When a fixed asset is scrapped or sold the desirability for such full and complete information becomes apparent. These accounting records are needed for preparing insurance claims in the event of insured losses. The total cost of fixed assets and accumulated depreciation for the fixed asset cannot be known with out these accounting records.

Accounting records one much helpful in adopting a settled and continuous financial policy under which each year's revenue would be charged with regularly measured sum based on capital outlay expired during the year and the annual computation of companies profit or loss. The danger of charging small and partial renewals of fixed assets to fixed assets account instead of charging profit and loss account as repair's can be

removed with the help of these records. The details of these records are given below:

Plant Register:

Plant register is a means of keeping records of fixed assets with the minimum efforts. Its purpose is to provide a continuing record of each item of fixed asset within a given classification and the accumulated depreciation applicable to it. In the cement companies, there should be a register for keeping record of all motor vehicles, another for free-hold land, another for buildings, another for machinery items and so on. In each register there should be separate folios or records for each fixed asset item etc. and in this register there register there should be a record of individual details of original costs, revaluations, depreciation charges and repair costs of every fixed assets. It is good if reconciliation is to be made with the control accounts both for the assets gross values and the accumulated depreciation regularly.

A convenient form of plant register is a loose leaf, having a page, which can be followed by others when required to each class of fixed assets. Each page should be headed with a description of a particular class of fixed assets, its declared length of life in years and its scrap value. There should be a space for the signature of the officials responsible for making this plant register by recording details of costs of repairs and maintenance for each item of fixed asset much valuable information can be had at the time of making decisions concerning the investment in new fixed assets.

It was observed during the course of my study, two cement companies maintain only plant register and one-cement companies do not maintain any record of fixed assets. The Associated Cement Company's Ltd. has been keeping the record of its fixed assets in details. Its information was recorded in – (i) Register of machinery, (ii) plant cost card, and (iii) Equipment cost card. The specimen forms of some of the cement companies under study are given at the end of this chapter. After a careful examination of these forms in appendix 4.1 to 4.4 a plant register has been prepared in appendix 4.11 by me, through which the cement companies can maintain detailed information. It is suggested that all the cement companies of M.P should also keep records, which is given as below:

(i) Table card for fixed assets:

In this system one card is prepared for every fixed asset. This record may be prepared for each department or process. The specimen of the card is given in appendix No. 4.5.

(ii) Class record:

Class record is helpful in calculating depreciation for each department, process or one bag of cement manufactured. The specimen of this is given in appendix No. 4.6.

(iii) **Class summary:**

Class summary are prepared with the help of class record. It may be prepared for group as a whole or for department process or for one bag of cement manufactured. The specimen of this is given in appendix No. 4.7

(iv) **Annual General Summary:**

With the help of this summary, yearly depreciation for a particular group of fixed assets is prepared. In this summary there are only four columns, one for the detail of fixed assets, second for gross block, third for total depreciation provided up to this year and the last for net blocks. The specimen suitable for the cement companies is given in appendix No.4.8

(v) Asset transfer order:

When one fixed asset is transferred to the other department or process, it is desirable that the fixed asset transfer order should be prepared. The specimen of such transfer order is given in appendix No. 4.9

(vi) Asset retirement order:

When a fixed asset is due for retirement it is always better, if an asset retirement order is prepared. In this retirement order all information relating to the cost of the fixed asset and depreciation is given. The specimen of this order is given in appendix No. 4.10

It is advised that every cement company of Madhya Pradesh should prepare and adopt fixed assets record. For assuring proper department location reference, and to uncover any theft and other losses it is best policy to verify the fixed asset physically form time to time for comparison with above records. These records should be prepared under the supervision of proper authority as fresh questions may arise form time to time. These records should be kept up to date in the joint control of the engineering accounts department of the company.

Changes in Depreciation Method:

:

An attempt has been made to find out the cause of change in the method of depreciation in the companies under study. The reasons for change over the method of depreciation as stated by the personnel's employed in the concerned cement companies have been simplicity of the use, equality of charge, financial and accounting considerations. It seems that the management of the concerned cement companies have been keenly interested in finding out a suitable method of depreciation and hence the employees in the concerned cement companies have reported various meeting and discussion which took place from time to time. The annual reports of all selected cement companies have also disclosed the need and reasons for changing the method of depreciation. The following table shows the changes in the method of depreciation under the study.

Table No. 4.13

Changes made in the method of depreciation

Name of units	old method	present method	year of change	reason of change
1- ACC Ltd.	W.D.M.	S.L.M.	1965	For written off losses
2. Birla Corp. Ltd.	W.D.M.	S.L.M.	1978	For written off losses
3. Prism Cement.	S.L.M.	S.L.M.	1992	....

The above table reveals that written down value method was replaced by the straight-line method in the case of ACC Ltd. and Birla Corp. Ltd. the reason stated for this change over is written off losses, but Prism Cement use S.L.M. till its corporation.

It has been alleged by some accountants that the recent switch over from written down value method of straight line method with retrospective effect is motivated by a desire to reduce past losses or to show more profits so as to be able to pay dividend and to show higher value of assets for obtaining more loan against them.[1]

It should also be noted here that this was done because of heavy expansion of projects, which was a necessary of the time and further, there was an un-usual drop in the net profit figures because of so many other problems. Thus, it was nothing, but a desire to cover up something unpleasant.

There is a prime-facia case to believe that the switch over to straight-line method with retrospective effect was motivated by a desire to improve current showings to reduce past losses. Further, the test of validity of this allegation in respect of the cement industry, it was observed that the ACC Ltd. had changed its method for witting off its past losses. Therefore we can say that the switch over the straight-line method with retrospective effect was motivated by only with a desire to reduce past losses.

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1. **Shah, Pravin P., Current controversies regarding depreciation, (The L.A., New Delhi, March 1965), P. 489.**

There is no much diversity in the accounting practices relating to change in the method of depreciation. This establishes the fact that retrospective change in the method of depreciation has been used by ACC Ltd., which has a source of showing more profits or concealing losses. This is due to poor accounting practice followed by this company and it should be discouraged. From a strictly legal stand point; the change of the method of deprecation is quite different from the method of re-valuation of fixed assets.

The excess depreciation to be adjusted on change of method is not a capital profit like surplus on re-valuation. Therefore, excess depreciation so adjusted is available for distribution of dividend. However, sound accounting does not favour such a course. Depreciation accounting should not be made a hand made of dividend policy. Such a practice will encourage on warranted change in the method of depreciation. The excess depreciation should be transferred to general reserve when a change in the method of depreciation is made. As a matter of fact, the change of method should be permitted only when it is justified on technical reasons relevant to depreciation accounting.

Selection of unit of depreciation:

After arriving of a real and true amount of profit & loss, it is essential to select appropriate unit of depreciation when the service life of a fixed assets is limited largely due to wear and tear. A depreciation unit which replace use in terms of output or kilometers is appropriate, on the other hand functional causes of depreciation predominate it is an accepted use that a unit of time i.e., years will give better results.

In the present study it was observed that for financial and tax accounting purposes all the cement companies under study are following time unit but management purposes in case of one unit adopt different unit of depreciation as is shown in Table No. 4.14.

Table No. 4.14

Selection of unit of depreciation

Unit of depreciation	For lease hold land and buildings, Patent Furniture and fixtures	For plant and Machinery	For Motor vehicle
Years	1	-	-
Output	-	-	-
Hours	-	1	-
Kilometers	-	-	1

In my view technological improvements are easier to gauge in terms of years. Thus, a unit based on time is more beneficial in comparison to others.

Chapter – 5

Depreciation Accounting

- Historical background of pricing policy of ACC Ltd and Prism Cement Ltd.
- Rational of uniform pricing policy
- Changing the cement pricing policy
- Fixed assets budget
- Fixed assets accounting and audit
- Programme of fixed assets audit
- Fixed assets accounting and ratio analysis

CHAPTER-5

Depreciation Accounting

Depreciation accounting is generally accepted today as a necessary part of accounting books of cement industry in Madhya Pradesh. The reason is obvious because without detailed accounts relating to fixed assets and depreciation. It is impossible to find correct profit and loss of a cement company as well as correct financial position. The important reasons are:

1. The information needed for the computation of depreciation will not be forth coming fixed assets accounts will furnish a complete history about each and every item of fixed assets of the company.
2. When a fixed asset is scraped or sold, the desirability of fixed assets accounting becomes apparent.
3. The danger of charging small and partial renewals of fixed assets in repairs accounts instate of capitalizing it in fixed assets account.
4. For calculating loss on retirement or sale of fixed assets or at arriving amount of balancing charge or capital gain on fixed assets.
5. Income tax authorities will not accept the claim of normal Depreciation, extra shift allowance terminal depreciation and investment allowances without furnishing detailed records relating to fixed assets of concern.

In our companies act a detailed disclosure relating to fixed assets and depreciation are required accounting to the schedule VI part I. i.e.

balance sheet. In this schedule following divisions are made for better presentation of fixed asset these are given below:

Schedule-VI

Part-I form of Balance Sheet

Balance Sheet

of.....

(Name of the company/Institute)

As at.....

(The date as at which the balance sheet is made out)

Instruction in according with which liabilities should be made out	**Liabilities** Figures for the previous Year	Figures for the current Year	**Assets** Figures for the previous Year	Figures for the current Year
			Rs. (b)	Rs. (c)
		FIXED ASSETS Distinguishing as for as possible between expenditure upon (a) Goodwill (b) Land (c) Buildings (d) Leas hold (e) Railway siding (f) Plant and machinery (g) Furniture and fittings (h) Development of property (i) Patent Trademarks designs and copy right (j) Live stock and (k) Vehicle etc.		

When I studied annual accounts of selected cement companies, I found that except one company remaining other companies are not disclosing their fixed assets in a better and systematic way, which is clearly evident from, the following Table No- 5.1.

Table No- 5.1

Disclosure of fixed Assets of Annual Account-

Name of Companies	Items of fixed assets disclose
• A.C.C Ltd.	Land and roads, water supply and Sanitation, buildings, Railway sidings, Plant and Machinery, Furniture and fixtures, motor vehicles, Tools and equipments, Telephone installation.
• Prism cement	Leasehold land, Land Road bridges and culverts, Buildings. Rail way lines, Wharfs, Jetties and sidings, Plant and Machinery, Furniture Fixtures and equipments motor vehicles, Telephone, Electric Installation, Library books.
• Birla Corporation Ltd.	Free hold land lease hold land-hold Land, Buildings, Railway siding, Road and water works, plant and machinery Furniture and office equipments Vehicles land,

Repair And Maintenance Policy-

It is important to have all the fixed assets at every time on working order because if fixed assets are not working order, it will create a big loss in the form of loss of customers, wastage of time in the form of idle time, loss of production and increase in overhead rate etc. If normal repairs are not done in regular course of time there is fear of big breakdown of plant and machinery. Thus loss of the time and money, have to the plant and machinery. Thus, repairs and maintenance can be divided into two parts:

(a) Normal repair and maintenance; and

(b) Extra -ordinary repair and maintenance

When I asked to the management of cement industry about the repair and maintenance policy, the management of all the companies where replied in the same turning that they have a regular, repair and maintenance policy and they have engineer to watch of at every stage the need for repair and maintenance.

The management of ACC. Ltd. told that they have a separate repairs and maintenance department and its function is to cheek all the plant and machinery regularly in such a way, that in a week all the plant and machinery can cheek at least once.

When I did talk in an informal way they smiled and told that all the machinery is insured and there is no fear of any loss due to negligence of repair and maintenance. The management of Prism Cement Company Ltd. told that their plant and machinery are insured at re-placement value and there is no loss due to negligence of repair and maintenance. Thus it is better

to have knowledge of insurance policy to study repair and maintenance policy the table no.5.2 showing insurance policy of selected cement companies.

Table No. 5.2

Insurance policy of different Cement Companies

Name of unit	building	Plant and Machinery	Furniture and fitting	Motor vehicles
• A.C.C. Ltd.	Replacement Cost	Replacement Cost	Nil	Comprehensive
• Prism Cement	Original Cost	Depriaciated Cost	Nil	Comprehensive
• Birla Corporation Ltd.	Original Cost	Depreciated Cost	Nil	Comprehensive

Above Table showing insurance policy of cement industry the first important point is that there is no insurance for furniture and Fitting of any cement company under study. Building is insured at replacement cost in one company and in rest two companies building are insured on original cost. In the case of plant and machinery insurance policy is of three types namely; replacement cost, original cost and depreciated cost. There are three type of insurance policy in regard motor vehicles, i.e., comprehensive, third party, accidental but all companies' comprehensive policy is taken for motor vehicles.

In my view for Selected cement industry it is better to name an insurance policy based on replacement cost for building, plant & machinery and for motor vehicles purposes a comprehensive insurance policy is suggested.

Historical background of pricing policy of Cement:

In 1942 when cement was brought under price control, the Government of India fixed the admissible to cement manufactures on a 'cost plus' basis. In 1946 the prices were re-fixed on the basis of cost of production of ACC units, as it was the single biggest group producing cement in the country. The prices thereafter were fixed basically upon the recommendations of the Tariff commission. In 1953, the commission was first time requested to suggest a fair works cost commissioned had recommended differential returns of law, medium and high cost units, besides the rehabilitation allowance for older plants in 1958. In 1961, the commission suggested ten differential retention prices based on a uniform 14 percent return on capital employed. The Government of India also allowed different retention prices in the light of the recommendations of the tariff commission.

The Government often expressed the view that 'A system of differential based on individual cost was not conductive to efficiency and greater production, and a uniform price for the industry' as a whole, would have the effect of compelling the high cost unit to seek economies and provide a measure of reward to those units able to achieve them. When prices admissible to producers are too firmly with costs, the manufactures

have no cumulative reason to adopt cost reducing measures. A uniform price, on the other hand, taxes the decreasing return units and subsidizes the increasing return units. The measure will have the desired impact, provided the less efficient firms have the desired impact, and provided the less efficient firms have the freedom and means to alter their scales as well as methods of production to improve their scales as well as methods of production to improve their affiance and economies the costs. Under the condition of industrial licensing, such a choice would at best be a theoretical possibility. The choice gets further narrowed when we also consider resource endowments, high investment costs per relocation of units and alteration in sales of production of the units faced with losses over the past years.

The Tariff commission viewed the differential prices are paramount need to 'Simulative the planned expansion of the industry to keep pace with the steadily rising demand in the country and fulfill the target set in the plan. According to the commission, the prices recommended by it should serve the following objectives:

(a) Units, which exist at present must be encouraged to maintain production at the highest possible level consistent with proper maintenance of plant and machinery. The low cost units should have sufficient inducements to expand while the high cost ones should not be impaired in their capacity for production and

(b) The new capital should continue to be attracted to this industry and Even small units should have a chance to get established and developed.

Thus, the argument in favor of differential prices rests primarily on the need to create conditions to increase production. Increase in production can be units to maintain their production through an appropriate price policy. The government accepted the strength of this logic and continued with differential prices till 1969, when a uniform price structure was introduced for the first time in the country.

Price Control:

The price structure of a commodity reflects the sum of its manufacturing cost and the profit needed for ensuring liability and growth of the industry producing that commodity. Fixing the fair prices is a technical and delicate task because number of theoretical and practical problems surrounding with the industry. It is difficult to identify a representative unit or a group of units, which can serve as a basis for fixing retention prices. This problem looks almost insurmountable in industries, which are predominated by units with different cost schedule, different sales of production, diverse manufacturing process and using various grades of raw materials with different prices. Cement industry is the classic example of this variety.

Therefore, controlled prices were fixed after on inquiry by the following tariff commissions and high power committee's appointed by the central government for the purpose –

1- Deference of India rules, 1942
2- Tariff commission, 1953
3- Tariff commission, 1958
4- Tariff commission, 1961

5- Tariff commission, 1974

6- High power committee, 1978

In the categories of cement prices, there are four important, i.e., retention price, F.O.R., destination price and retail price for packed cement. The first category of retention price relates to what is payable to the manufacturer for non-packed cement. It is an ex-factory price, which is fixed by the government time to time. The F.O.R. price comprises retention price, central excise duty, and packing cost, incidental and uniform freight charges. The retail price of cement includes F.O.R. price, central sales tax, state sales tax and octroi, besides incidental expenses. Each individual component of the cost is the fixes by the government, so that the F.O.R. price of cement is uniform throughout the country. The retail price of cement varies because of variations of sales tax and octori rates in different states where cement is sold.

Price control – Genesis and objectives:

Non-competitive conditions are today a fact of life in some developed and many developing economies. In the present day economies, the basic assumptions made for the success of price mechanism to achieve supply demand balance and price stability do not hold good, as periodic physical scarcities of commodities, heterogeneity in the process of manufacture, variations, in input prices etc. stand in the way of efficient operation of free market forces. Economists and administrators, therefore, advocate substitution of control on prices of a commodity and its distribution, voluntary or statutory type, in place of market mechanism, as the latter is regarded as in-efficient instrument to 'held and price line' and

channel investment to priority sectors. Making a policy of the prices by a statutory authority is considered an in-escapable measure to meet shortages in essential consumption and investment goods of developing countries. Physical scarcities of commodities are an avoidable feature of these economies where investment is raised to higher levels, while actual production takes place after a time lag. Direct controls are also justified on the ground of economic logic that they prevent all these units of demand, which have a higher marginal demand price but lower social value. The commodities generally chosen for imposition of controls are basic consumer as well as investment goods. Cement comes under the latter category.

Barring a few years in the past demand of cement had always out stripped supply. The country had launched massive construction programmes for irrigation and industrial development. Since these programmes required large quantities of cement, price had to be regulated and its supply directed to the more important purposes. The balance output of cement left after meeting priority needs to be released to the general public, again at predetermined prices, to prevent the exploitation of the consumers.

The instruments chosen for attaining the above policy goals are:

- A system of retention prices to manufacturing units.
- A uniform price to consumers in all parts of the country through a freight equalization arrangement and
- Allocation of available output to various consumers according to pre determined priorities.

It is debatable whether efforts of the government in effecting a rational allocation of available supplies among competing users at equitable prices have been a success or not priority sectors, which include public construction generally, received the cement of their requirement while non-priority users sometimes paid higher prices to get the quantity needed by them.

As stated earlier, an integral part of the price control mechanism is the fixation of fair prices to industrial units producing cement. In fixing retention prices, the government's avowed objective is that the industry should remain viable and generates funds for its growth, preventing at the same time the excessive profit earning by it.

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Rationality of uniform price:

A single uniform price for all units in the cement industry would be a logical and justifiable on these grounds:

- The unit comprising the industry have a more or less similar cost structure; and
- The different that exist, if any are purely due to efficiencies.

The cement units in the country displayed a wide divergence in their cost of production. It was noted that these cost disparities arose not always due to the differences in the quality and competence of the management but more frequently ascribed to the following reasons:

- Variations inquiring and other assembling costs of lime-stone;

- Quality of limestone available;
- Age of the plants and manufacturing technology employed;
- Labour employed per tone of cement production; and
- The rate at which coal and power are procured by individual units.

In the absence of a comprehensive productivity study of units, it is not possible to identify the scope for cost reduction. If replies from individual cement units are any guide, some of them are facing problem of eliminating wastes and reducing costs, while such efforts are welcome, their impact on narrowing the present cost difference among units appears to be minimum. The cost review had shown that the management has limited choice in the matter of certain costs. The case of fuel and power costs is an instance, which proves the impossibility of minimizing cost differences. Equation of coal costs are precluded as its transportation costs differ widely from unit to unit, through the pit head prices are more or less the same. Similarly, due to variation in the power tariff between the states, power costs cannot be reduced to points within narrow limits. Limestone assembly costs also varied from unit to unit largely due to reasons beyond the control of management. If it is accepted that existing cost differences between cement producing units arise due to the factors beyond the control of management, the argument in favour of a uniform price as an instrument to affect cost reduction has limited validity.

Use of weighted average cost for price fixation:

If fixing of uniform price for all cement units is illogical, calculation of a uniform retention price on the irrational an average might

prove a sound basis for determination of retention prices. If manufacturing cost of individual units cluster around the average. As this has not been found to be the case with the cement producing unit's weighted average cost cannot be realistic yardstick for fixing the price of cement.

Moreover, in the principle of averaging, high cost units always stand to lose, as many items of their actual expenses are not fully neutralized. On the other hand, low cost unit get over compensated for expenditure not incurred by them .A pertinent case worthy of detailed study is transport cost of coal. The tariff commission (1974) had found that the average transport lead on coal comes to 975 kilometers for the units surveyed by it. This formed the basis for computation of transport cost of coal in the retention price recommended by it.

The government adopted the basis for compensation of subsequent increase of costs under an escalation clause. This system of freight reimbursement on coal works is a disadvantage to these units located at distances in excess of the average distances, as their actual expenses are not fully neutralized under this system. As on September 1974, the weighted average transport load on coal for the Tamilnadu and Gujarat unit was 1845 kilometers and 1839 kilometers respectively and actual freight paid by them worked out Rs. 77 per tone. As against this only Rs. 48.60 per tone is actually admitted in the price built-up by the Tariff commission. Initially the units absorbed this loss as concession tariff was applicable on a long distance movement of coal till 01.04.1974 and location advantages enjoyed by them partly neutralized this disadvantages from 1974-75, however railways revised the coal tariff which, in effect terminated the subsidies

available to coal consumers situated parties from coal fields. This aggravated the cost disadvantage of the units in these parts.

Changing the cement Pricing Policy: -

In 1974 the Government retained the uniform retention price but rejected the rehabilitation allowance as also the creation of the revaluing fund for establishing new plants with one million tone capacity. The price so fixed was uneconomic, the implementation of the escalation clause was tardy, the increase in retention price granted after much delay. The growth of the industry has been very slow and halting till the eighties and modernization was then unthinkable for lack of incentive and capacity 0f funds. The situation changed for the better when in 1977 government announced their policy to grant 12 percent post tax return on net worth to new units.

In December 1978, the high level committee of Lavraj Kumar appointed by the Government recommended a new price structure based on costs prevailing at that time. The Government Introduced a 3- tier price structure for low, medium and high cost units and a special price for new undertaking and substantial expansions. These prices were recommended on the basis of 85 percent capacity utilization, various cost elements and 12 percent post tax return on net worth. The price was announced after a delay of 10 months, ignoring the cost escalation in the intermittent period. Price was to be reviewed annually, though the recommendation was for a quarterly review.

Price decontrol and changes in pricing since 1982 -

On the line of 1977 pricing policy the partial decontrol policy was introduced from Feb. 28, 1982 in cement prices, which gave a further, fill up to the industry and market a turning point in its history. The finance minister announced a scheme of 'levy' and 'free' cement with a dual pricing policy. Accordingly, the levy price are administered by the government through the public distribution net work, while the free component (which at the time was fixed at one third of production) could be marked by companies through there own channels at open market prices.

Before, January 1982 there have been sizeable and continuous increases in the manufacturing cost of cement due to sharp spurts in the input costs, mainly due to government's own action over which the industry has no control. The cement manufacturing association (CMA) has been representing to government from time to time and the total price escalation claimed by it to neutralize the increase in cost amounted to Rs. 149.88 per tone during the four year period 1982 to 1985 as against this claim, government has granted so for only Rs. 91 per tone, made up partly by a price escalation of Rs. 40 per tone and partly by a marginal reduction in the levy quota from 66.6 percent to 65 percent of the installed capacity for the existing units with effect from 18th July, 1984, and a further reduction in the levy obligation from 65 percent of the installed capacity to 60 percent of actual production, effective from 4th June, 1985. Government at Rs. 51 per ton the uncompensated balance due to industry works out to Rs. 58.88 per tone has computed the final implication of the reduction in the levy quota. There has been a further hike of the order of Rs. 10 per ton since January, 1986. The net result was that a sum of Rs. 68.88 remains uncompensated.

Apart from the four input costs covered by the BICP formula, there are other cost components, which have materially gone up and have to be borne by the industry. Their incidence may be estimated at about Rs. 30 per tone.

With the increased availability of cement, both levy and non-levy, there has been a market-declining trend in the market prices of non-levy cement. Squeezed between the mounting cost increase, on the one hand and a marketed downward trend in non levy prices, on the other almost all cement units are losing on sales of levy cement and there is a yawning gap between the assured 12 percent post tax return and the actual weighted average realization of the industry which at present is less than 5 percent on net worth. That time the levy price of Rs. 375 (335 + 40) per tone is much less then the average per ton cost of Rs. 550 to Rs. 575 of the industry. It is both unjust and inequitable to subsidies levy consumers by asking the industry to supply levy cement at price below the actual cost of production. Government should in all fairness accede to the legitimate demand of the industry and sanction with out any further delay. The balance of escalation due till date and mitigate the hardships of the industry.

In this context, it is pertinent to note the recommendation of the planning commission's working group for the seventh plan that "unless reasonable returns are ensured such massive Investments (of the order of Rs. 450 crores per year to create new capacities licensed for the Eighth and ninth plans) are not likely to fluctuate. Escalations on retention prices at periodic intervals are essential to achieve this objective. Since increases in input costs are due to Government action a fair approach seems to be to have a built in provision for automatic adjustment of the levy price to

neutralize their incidence effective from the date of the cost increase. If for any reason, this is not considered feasible, a high power Review committee may be constituted to review the question of price escalation once in every six months, more or less on the lines of the committee for the fertilizer industry. So that the industry is realization of 12 percent post tax return does not get eroded as this happened now.

Government has provided special relief in levy obligation to sick units as well as new units at the same rate. Government originally designed fifteen units as 'SICK' and the sickness benefit in the form of a lower levy obligation were extending on a year-to-year basis. After examining the position in consultation with BICP, Government has continued the sickness concession to 9 units for varying periods for two units up to 1986-87, for 6 units up to 1987-88 and for one unit up to 1989-90. The performance of these needs to be closely and regularly monitored to ensure that the sickness benefit is not abused and that the sick units actually take necessary appropriate steps and become economically viable within the schedule time frame.

New units may be considered under two categories, those which came into production during the period 1982 to 1985 i.e., the existing new units and those which will be commissioned during the seventh plan period, i.e., the future new units. The capital cost, which was adopted by the BICP in 1979 at Rs. 650 per tone of installed capacity, went up to Rs. 1000 in 1981-1982, Rs. 1300 in 1983-1984 and further to Rs. 1500-1600 in 1986-87. The relief given to new units in the form of reduced levy obligation of 40 percent of actual production is grossly inadequate, with their high

interest and depreciation charges, coupled with a step fall in non levy prices, materially below the ceilings recommended by the C.M.A., the existing new units are facing a serve financial crests. The prospects of future new units at green sites are still worse.

It is apprehended that under the prevailing high capital costs and low non-levy realization, they will all be born sick. The association has therefore represented to government to extend certain additional relief to those two categories of new units to enable them to become economically viable. It is gratifying to learn that these are under government's (presumably favorable) consideration. We earnestly urge government to provide the required reliefs urgently. At present there is no control on prices of cement.

In conclusion, what the industry looks for is the assured return of 12 percent post tax, which has been responsible for the spectacular growth of the industry in terms of expansion of capacity and production, modernization, etc. Any failure on this front may shake the confidence of the entrepreneur, and while the capacity target for the seventh plan may materialize, as most of the new projects are already in pipeline, the expansions set for the eighth and ninth plans raising the capacity to 100 million tones in tenth five year plan. The production of cement increase more than 50 percent and reached 157 million tones by the turn of the century as well as modernization may well be in serious jeopardy. Government should therefore announce a national policy for cement reassuring the industry of 12% Post tax return to sustain the interest of entrepreneurs and enable cement units to undertake long term planning for

modernization and expansion to meet the capacity targets set for the future five year plans.

Fixed Assets Budget: -

Forecasting and budgeting of fixed asset is a vital part of the policy making in the cement industry. The Second World War has stimulated a genuine and lively interest on the part of the management of cement units to replace their old and obsolete plant and machineries. Almost all cement units have expanded their fixed assets and other means for increasing their volume of production and improving quality of the cement. Innovating is often the means of continuing to make maximum profits in the unit. Investment in fixed assets, both for replacement and new projects, go hand in hand with the progress of the unit. Unless the plant and machinery can be utilized fully, the investment in the depreciable assets is a doubtful proposition. Only by careful analysis of each project in terms of possible annual profit earned by the unit will be a sound decision that is possible.

The urgency of the need for certain fixed asset may arise from one or a combination of a number of factors. The development of new product expansion of the output needs to reduce cost and requirement safety is the main factors. Budgeting of depreciation, repair and maintenance, interest and use of fixed asset is necessary for showing the possibility of expending the production facilities to cover additional sales showing in the sales budget. It provides the alternative forms of assets to be considered as replacement for fixed assets, which are wearing out or are in danger of becoming obsolete. It is useful when considering methods of reducing costs.

A cost reduction campaign may necessitate the consideration of purchasing more up to date fixed assets. The capital cost of improving working conditions or safety can be obtained through fixed assets budget.

In the present study one unit followed return on investment method and net gain method for assessing the profitability of fixed assets, one unit return on investment method, present value method and trail and error yield method. While the rest one unit trail & error method, yield method, present value method and pay book method.

It is good, if every cement unit follows present value method in pay back method. These arguments may be given in favour of above two methods. When we consider different investment with earning patterns, which are the same at that time, we can make any valid comparison by discounting earning to present values. In this way, we can consider timing of the receipt as well as cost incurred at different intervals. Present time is very charging and new leading units introduce inventions so pay back method is most suitable. It shows how quickly the investment in a fixed asset will be recorded. For the cement unit which is experiencing rapid technological development the limited pay back period is good because it offers some protection from the danger of obsolescence.

Fixed Assets Accounting and Audit: -

The position of an auditor is extremely awkward. The auditor has to certify profit and loss account and balance sheet as to whether they represent the true and fair view of state of affairs of the unit. If provision for

depreciation is not made or provision is inadequate the result will be the inflation of earnings and balance sheet will not represent the true financial position of the unit. The auditor is not a technical 'know how' and hence he is not in a position to know about the adequacy or inadequacy of the provision for depreciation and working life of fixed assets. But if auditor is of the view that provision for depreciation is inadequate, he must disclose this fact in his report with quantity of inadequacy.

In the present study following cases arise, where provision for depreciation is in adequate and auditor discloses this fact in his report. Study of the auditor's reports of the various cement units under study revealed certain significant facts about the provision of depreciation and fixed assets revaluation in these units. A careful study of these reports showed that the Acc Ltd made no provision for depreciation in 2000 to 2002.

The remarks of auditor's of the ACC Ltd. are with quoting "No provision for depreciation have made by the company during the year."[1] Like same above discrimination of interest is also maintained by the auditors in the prism cement in the year 2000. Like the Prism Cement has not recorded fixed assets register so that auditors could not know about re-organization and discrepancies. Auditors has maintained in his record in the year 2000 to 2002.

It becomes evident that the unit could not make any provision for depreciation, which was largely due to absence of any profit earned by the unit. By discussion with chief accountants/financial managers of these

1- **Annual Report of ACC Ltd. Year, 2000 to 2002.**

units that main reasons for not providing depreciation on lease hold property were that the Income-tax act and companies act did not enforce the provision for such depreciation, and in the profit and loss account charge under the head 'Royalties' was made against the revenue. The auditors of cement units under study have paid special attention in their reports to the provision for depreciation by the units, which is certainly a very healthy tradition set by them.

However, it is suggested that the auditors of the cement unit should keep the following objectives in their mind at the time of the verification of fixed assets. They should see whether or not the provision for depreciation has been consistently and correctly made and that it results in a reasonable periodic charge to profit and loss account. To check that fixed assets should held under companies ownership, there are physically present or not and for valuation of fixed assets auditors must take the certificate by the management. The auditors must satisfy themselves that the units policy of accrual, retirement, valuation and adjustment are consistently with those of past year are also satisfactory. They should try to encourage internal studies and rates, bases and methods of providing depreciation.

Programme For Fixed Assets Audit:

It is good if the following points were considered in making audit programmes for fixed assets for cement industry. First of all auditor should try to examine the profit and loss account, balance sheet, auditor's report, director's report and chairman's speech of the previous financial years and make an enquiry about the system of internal check for

depreciation and fixed assets and judge whether it is efficiently conducted. He makes an enquiry about the name of the persons who write the books of accounts relating to depreciation and fixed assets and also obtain the specimen signatures of those officers. He must verify the cash purchase of depreciable assets with the cash memos received from suppliers and verify the payments for depreciable assets in the bank with the passbook and the counter-folios of the chequebook. Also verify top payments to the supplier for the consideration of depreciable assets with the received from suppliers. He must vouch the assets have been entered into plant register.

He must check the entries about fixed assets with documentary evidence, correspondence, agreement, memorandum of articles and association, minute books of the board of directors. He must prepare a summary schedule of depreciation expenses for the major fixed assets as classified in the fixed assets, ledger accounts, listing opening balance, provisions made during the year, transfers, deductions and closing balances. He must verify the provision for depreciation and deductions made in the provision for depreciation account on account of sales, discard or demolition of the fixed assets. He must see the method of valuing life of the asset and if the method of providing depreciation is in appropriate than give suggestions. He checks the scrap value of fixed assets, rate, basis and method of providing depreciation. He must review the fixed assets policy set forth in the units manuals or the other method in use are carefully designed and intended to allocate cost of fixed assets equitably over their useful lives.

He can discuss with management the possible need for recognition of extra-ordinary obsolescence resulting form investments or economic development. He can compare the percentage relationships between provision for depreciation and related fixed asset accounts with that previews year as well as with other units and discuss significant variations with management. The tariff board 1948 was of the view that depreciation was allowed on the rates prescribed for income tax purposes. It was about 4% of the gross block.

The tariff commission 1962 was also of the view that depreciation is calculated as per Income-Tax Act, 1961. It was approximating to 3 percent of production cost or 4 percent of block. Thus, we can say that board and commission did not subscribe to the view that depreciation should be calculated on the basis of replacement cost estimates. It was argued that replacement cost were often arbitrary. They preferred to have historical cost basis suggesting the additional sums provided for replacement cost should be regarded as reserves and to be treated such in accounts.

Thus we can conclude that this approach towards provision of depreciation has not kept pace with progress and the need of cement industry. It is suggested that depreciation may be allowed at replacement cost as is allowed in case of cement industry.

Fixed Assets Accounting and Ratio Analysis: -

Here significant ratios have been used for making an analysis of relationship between depreciation, fixed assets, profit, long-term borrowing, net worth some other relevant items of balance sheet and profit and loss account in cement Industry. A ratio is nothing but simply one number expressed in terms of another. It is an expression of relationship spelt out by dividing one figure into the other. A percentage is one kind of ratio in which the base is taken as equaling 100 and quotient is expressed as "per hundred" of the base the ratio serve many purpose. They can assist the management of a cement unit in basic functions, forecasting, planning, co-ordination, control and communication. Some of the main advantages of ratios relating to fixed asset accounting are given here.

The plan made by the management can be "Sign posted" by these ratios. These ratios become an integral part of the accounting and budgetary control system. The past ratios indicate trends of important facts of a unit. Therefore, ratios become helpful for forecasting like event in future Control of performance as well as control of costs may materially be assisted by the use of ratios. Through ratios management of cement units becomes in a position to summarize and simplify the masses of the data. Through ratios an invaluable aid to the management of a cement unit can be provided and also to other persons who are interested in analyzing the operations and state of affairs of the unit. Through ratios the efficiency of a particular unit can be measured by comparing its past ratios. Inter firm comparison is also possible with the help of ratios. That is to say, a unit's performance can be compared with that of other unit's or industry as a

whole. Through ratios the efficiency of a unit from one period to another can also be measured.

The ratios by themselves are not conclusion. Inferences must be drawn form the ratios and for this purpose ratios must be drawn first. Certain criteria to interpret the ratio must be established first. A single ratio is of limited value. It is so because trends are of great importance. A change in one ratio may be of significance only when viewed in relation to another ratios. Ratios will be scanned for any intrinsic meaning they may process; these ratios will be supplemented by further ratio analysis. The ratios will be studied over time and ratios will be compared with the ratios of other units. It will help us in determining the relative position of the unit as well as the degree of the conformity of units trend to the trend of the industry.

Ratios for Depreciable Assets Accounting: -

Many types of ratios may be used for analyzing fixed assets. With the help of the following ratios, the relationships between the fixed assets and other items of balance sheet and profit and loss have been analyzed. These ratios have been calculation from the data contained in the financial statements. The following are the main ratios for analyzing the fixed assets accounting:

(i) Depreciable Assets to Net Sales:

Sales commensurate to the investment in the fixed assets is an important measure of the efficiency and profit earning capacity of the concern, because higher the sale per rupee of fixed assets, the greater is the

intensive utilization of fixed assets. Low sales in relation to fixed assets means under utilization of fixed assets. But too much sales may be an indication of over trading. Following Table no.5.3 shows ratio of fixed assets to net s

Table No.5.3

Ratio of Gross Fixed Assets to Net Sale Of Selected Cement Companies

Net Sales/Gross Fixed Assets

In percentage

Year	Name of Company		
	ACC Ltd.	PRISM Cement	BIRLA Corporation Ltd.
2000-01	85.57	48.64	69.21
2001-02	90.57	53.73	87.17
2002-03	79.58	56.52	106.90
2003-04	86.65	65.92	105.03
2004-05	95.65	74.22	129.93
2005-06	68.78	94.99	110.96
2006-07	119.00	118.68	135.66

Source: Report of Stock Holding Corporation of India Ltd.
Source: Annual report of concerning cement companies.

According to analysis of Table No. 5.3, we can say that in 2000-01 in ACC Ltd. the net sales was 85.57 percentage of gross fixed assets, while in Prism cement and Birla Cement Corporation Ltd. this ratio was respectively 48.64% and 69.2% only. In 2004-05 this ratio up in all three selected cement companies and in ACC and Prism cement this ratio was 95.65% and 74.22% respectively, while same time in Birla corporation Ltd. net sales was more than (129.96%) gross fixed assets. In 2006-07 all three selected cement companies net sales was more them their gross fixed assets, and ratio was gone up ACC, Prism cement & Birla Corporation by 119%, 118%, 68% and 135.66% respectively.

(ii) Net Fixed Assets to Net Worth:

It is the duty of shareholder to finance the purchase the fixed assets of the company. Therefore, shareholder's equity (share capital and reserve and fund) should be equal to fixed assets, i.e., ratio should be 1:1. If fixed assets are more than shareholder's equity, then it shows that some fixed assets are financed out of borrowed capital and any withdrawal of borrowed capital by the lenders will put the company in difficulties. Coverage of fixed assets are not covered by tangible net worth, may not have a chance to service. In fact, the tangible net worth of the company must be more than the fixed assets so that a portion of the working capital is provided from permanent owned funds. Sometimes a deviation is made in the above ratio; instead term loans are also included to see the solvency of the concern. This is because in certain types of business where large properties are held, it is quite usual for secured loans to cover a large proportion of the fixed assets.

Table No. 5.4

Ratio of Net Fixed Asset to Net Worth Of Selected Cement Companies
(Net Fixed Assets/Net Worth)

In percentage

Year	Name of Company		
	ACC Ltd.	PRISM Cement	BIRLA Corporation Ltd.
2000-01	272.56	259.89	126.88
2001-02	238.68	246.39	133.21
2002-03	219.98	239.92	142.89
2003-04	175.49	232.15	126.15
2004-05	157.05	193.7	95.16
2005-06	136.01	137.55	130.95
2006-07	92.99	87.78	77.68

Source: Report of Stock Holding Corporation of India Ltd.
Source: Annual report of concerning cement companies.

Table No. 5.4 shows the Ratio of Net fixed assets to Net worth shows the environment or condition of fixed assets and net worth by comparison. If in any concern have more net fixed assets than net worth, called healthy financial structure. According to table no. 5.4 it show the net fixed assets to net worth ratio of ACC Ltd., Prism cement and Birla Corporation. In ACC Ltd. & Prism cement, this ratio is decreasing every year and in 2006-07 this ratio is nearly one third ratio of 2000-01 .In Birla cement corporation, the net fixed assets to net worth ratio is fluctuated and decrease in 2006-07 more than 50 percent and gone up 77.68 percent. So we can say tat all studying cement companies increasing their fixed assets regularly and it is indication of more use of funds.

(iii) Return On Capital Employed:

Properties, invest money in a business to obtain a satisfactory return on their capital, which is invested in all types of fixed assets, like motor vehicle, plant and machinery, furniture, fixtures and land and buildings, etc. The return of this nature will be affected by various factors like risk of inflation, fluctuations in external economic conditions, etc. It is also in shareholder's interest, so they want to know the actual financial position and profitability of their company. This Ratio is used to show the efficiency of the business as a whole.

It is very popular ratio in the field of financial management; it is used for various managerial decisions. Finally, we can say that this ratio is calculated to judge the overall performance of the cement company. The

Table No. 5.5 shows the ratio of return on capital employed of selected cement companies in Madhya Pradesh.

Table No. 5.5

Ratio of Return on Capital Employed
(Net profit/Capital employed)

In percentage

Year	Name of Company		
	ACC Ltd.	PRISM Cement	BIRLA Corporation Ltd.
2000-01	7.69	-53.38	0.87
2001-02	8.37	-60.91	1.45
2002-03	9.65	-72.85	1.89
2003-04	14.79	-18.23	16.87
2004-05	23.68	30.63	28.72
2005-06	24.89	29.78	33.56
2006-07	39.19	46.88	49.65

Source: Report of Stock Holding Corporation of India Ltd.
Source: Annual report of concerning cement companies.

When we want to know overall performance of any concern, need some analysis of ratios. In this regard the return on total capital employed ratio is very important to calculate or analysis return of capital employed. It is shows in Table No. 5.5, the studying cement industry. A.C.C. Ltd. gets 7.69 percent and Birla Corporation Ltd. get Only 0.87 percent return on their capital employed in 2000-01, but Prism cement was loss 53.38 percent of their capital employed. These ratios increase up to 2002-03 and reached 72.85 percent. After following year Prism cement's loss down up to 18.23 percent of their capital employed. Next year 2004-05 Prism's performance was very satisfying and first time Prism get profit of 30.63 percent of their capital employed. At the end of 2006-07 the Prism's cement get 46.88 percent profit of their capital employed while A.C.C. Ltd. net profit increasing every studying year 2000-01 to 2006-07 the net profit was 39.19 percent of their capital employed. Birla Corporation Ltd net profit was nominal (1.89%) till 2002-03, but after this year, Birla Corporation Ltd. Get net profit 16.87 percent in 2003-04. Birla Corporations performance was best in 2006-07 and corporations get net profit half (49.65%) of their capital employed. So according to this analysis we can say that at the end of 2006-07 all studying cement industries maintain forthcoming year.

(iv) Fixed Assets to Funded Debts Ratio:

In this ratio, there is comparison of funded debts with the fixed assets on which the bondholders have a prior claim. This ratio shows rough idea of the degree of the protection to the bondholder's. For this purpose the ratio of fixed assets to funded debt is used, which is calculated as under:

Ratio of fixed assets to funded debts = $\frac{\text{Gross blocks}}{\text{Funded debts}}$

This ratio show as supplementary major to determine security to the bondholder, this ratio determines what parts of fixed assets and the long-term creditors finance and what part by owners. This ratio is important to both long-term creditors and the owner's of the business. In other words it shows that how many times fixed assets cover bondholder. The table 5.6 shows the ratio of fixed assets to funded debts of selected cement companies of Madhya Pradesh.

Table No. 5.6

Ratio of gross block to fund debt of selected cement companies

In percentage

Year	Name of company		
	ACC Ltd.	PRISM Cement	BIRLA Corporation Ltd.
2000-01	161.42	138.76	230.30
2001-02	226.33	172.35	217.32
2002-03	260.76	180.93	258.90
2003-04	285.53	201.93	285.53
2004-05	271.63	254.63	289.46
2005-06	432.01	553.43	432.00
2006-07	624.54	Nil	624.33

Source: Report of Stock Holding Corporation of India Ltd.
Source: Annual report of concerning cement companies

In 2000-01 A.C.C. Ltd fund debt was 161.42 percent of their gross block and its ratio increases every year except 2004-05. At the end of 2006-07 this ratio, Increase nearly 4 times (624.54) than 2000-01. It means gross block are increase and debt are decrease continuing. In Prism cement the gross block are 138.76 percent of debt during 2000-01, but it increase 4 times in 2005-06 (553.43%) it mean gross block increase and debt decrease in 2006-07. Prism cement has no any type of debt. In 2006-07 Birla corporation Ltd gross block to fund debt was 330.30 percent in 2000-01 and it some increase in next two years; but in 2003-04 this ratio jumped by 513.91 percent of debt. According to this analysis we can say that in all studying cement companies performance are very satisfying.

(v.) Net Profit to Fixed Assets Ratio:

Ratio of net profit to fixed assets is calculated for measurement of profitability of the enterprises. This ratio indicates the earning on fixed assets independently to the sources of funds invested in them. The return on funds invested in the fixed assets is an overall measure of the efficiency of business. This ratio shows that how many percentage of profit earn on the fixed assets, if this ratio is high, it shows that company is in a good position to earn profit in relation to fixed assets. The table No. 5.7 shows the ratio of net profit to fixed assets

Table No. 5.7

Ratio of Net Profit to Fixed Assets

(Net Profit / Fixed Assets)

In percentage

Year	Name of Company		
	ACC Ltd.	PRISM Cement	BIRLA Corporation Ltd.
2000-01	3.58	-9.37	1.2
2001-02	3.83	-8.45	0.89
2002-03	4.01	-7.82	0.97
2003-04	6.99	-1.53	10.03
2004-05	11.73	6.78	16.58
2005-06	15.41	17.45	17.97
2006-07	30.61	38.18	34.12

Source: Report of Stock Holding Corporation of India Ltd.
Source: Annual report of concerning cement companies.

According to table no. 5.7, in 2000-01, the ACC Company earned net profit only 3.58 percent of fixed assets. But after this net profit increasing regularly every year. ACC's net profit to fixed assets was in 2005-06 only 15.41 percent, but next year (2006-07) it doubled and goes up 30.61 percent. Prism cement was suffered from loss during 2000-01 to 2003-04. But after this (2004-05) it earned profit 6.78 percentage of fixed assets. It is surprising that in 2006-07 Prism's profit increasing about four times (38.19%) of 2004-05. Birla Corporation gets nominal profit during 2000-01 to 2002-03 but after this it also gear up and profit achieve 17.97 percent of fixed assets. Next year (2006-07) it's profit double and go up 34.12 percent of fixed assets. So above analysis we can say that all studying cement companies doubled their profit in 2006-07 than 2005-06. It is very good indication of studying cement companies for their investment development and betterment.

(vi) Depreciation as Percentage of Net Sales

This ratio establishes relationship between the amounts of sales and depreciation during the years. It shows the share of depreciation with sales. The Table No.5.8 shows the ratio of depreciation as percentage of sales, which is given on next page:

Table No.5.8

Ratio of Depreciation to Net Sales of selected Cement Companies

In percentage

Year	Name of Company		
	ACC Ltd.	PRISM Cement	BIRLA Corporation Ltd.
2000-01	4.38	10.42	7.69
2001-02	4.87	11.15	5.45
2002-03	5.69	9.33	3.41
2003-04	5.39	7.55	3.26
2004-05	4.80	7.25	2.62
2005-06	5.18	5.36	2.81
2006-07	4.44	4.15	2.54

Source: Report of Stock Holding Corporation of India Ltd.
Source: Annual report of concerning cement companies.

According to analysis of Table No. 5.8 we can say that in all studying cement companies the ratio of depreciation to net sales is very satisfying. In 2000-01 in ACC Ltd. depreciation to net sales ratio was 4.38% after one year this ratio was some climb by 5.69%, but the end of 2006-07 this ratio down to 4.44%. In Prism Cement depreciation to net sales ratio was high than ACC Ltd. & Birla Corp. (10.42%) and increase in next year, but after this ratio was down every year, till end of 2006-07 this ratio was 4.15%. In Birla Corp. 2000-01 the depreciation to net sales was 7.69%, after this depreciation to sales ratio normally down every year and reached depreciation 2.53% of net sales. So on the basic of above analysis we can clearly say all selected Cement companies depreciation to net sales ratio is fall every year. It is good indication of better management of capital, sales & manpower of Cement Industry.

Chapter – 6

Accounting for depreciation price level Changes

- Arguments in support of price level changes
- Treatment of fixed assets under A CC Ltd and Prism Cement Ltd.
- Effect of Price Level changes of the A CC Ltd and Prism Cement Ltd.
- Arguments against the price level changes
- Accounting entries in the A CC Ltd and Prism Cement Ltd.

CHAPTER - 6

Accounting for Depreciation price level Changes: -

The important objective of accounting is the preparation of final accounts in such a way that they give a true and fair view at the business operations and the financial position of the concern. In other words, the income statements should disclose the true profit or loss earned by the concern during a specific financial year, while the balance sheet must show a true and fair view of the financial position of the business on a specific date. We know, that final accounts are prepared in monetary units i.e. rupee in our country. They can serve very well the basic objective if the value of such monetary units remains stable. This is possible only when there is stability in the price levels, but we know that over a period of time, the price has not remained stable. There have been inflationary as well as deflationary tendencies. The inflationary tendencies have been more frequent and since 1931 they have been dominating economy of whole the world. It is increasing being accepted that in spite of all fiscal, monetary and physical measure taken by government price level is change in very fast.

In view at the above, it has been increasingly felt that the accountant will be failing in his duties, if he continuous to remain contempt with the time honored and traditional system of accounting by historical cost. He should move with the time and evolve a suitable system at accounting to deal with the changing price levels.

With more than fifty years history, the accounting for price level changes had its inspection in India only during last decade. This revolution in the field of accounting has been satisfactorily welcomed here. The finding of an Indian council of social science research project entitled "Industry Practice in Inflation Accounting in India" assets that though in about 90% cases historical accounting continued, cent percent respondents felt the application of inflation accounting (as they called it) useful. While the debate on the accounting method to come up with price changes in continued, a sense of consensus has by now, emerged in the accounting world over the issue that monetary values, in financial statements be made more comparables by mitigating effects of changes in the value of money.[1]

Conventional financial statements based on historical records do not reflect true and fair picture of trading results and financial position of a business entity under the conditions of inflation and thus they mislead internal and external users of profit and loss account and balance sheet. The profit's show by profit and loss account under conventional system of accounting are not correct because profits are as certain by matching current revenues with current and non current cost. Besides this, monetary assets and liabilities also affect profit position during periods of rising prices. It monetary assets are held during periods at price increase, the owners will experience purchasing power losses; monetary liabilities held during such periods result in purchasing power gain. Conventional accounting in historical costs merely protects the money capital and not the purchasing

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1.Banerjee B.: - Inflation and Corporate. Reporting in India "The Management account Calcutta" April 1982, Pg. No. 194.

-power units in the original capital. Thus, the capital invested is not maintained intact in real terms. The Unadjusted accounting information (for price level changes) is not useful for management in its decision making as the data on the basis of which decisions are made are mixture of various purchasing power of divergent times.

The existing accounting practice of preparing financial statement are based on accounting assumption, viz., the monetary postulates, which state that the value of the monetary unit is stable. Apparently, the financial position shown by position statement and profits shown by the income statements of concern may be 'true and fair' under the stable price economy. But in the real world, the rupee or any other monetary unit does not maintain a stable value in terms of real goods and services. One unit of money commands less goods services in the case of high inflation and vice-versa.

In case of incessant and enormous inflationary trend, the financial statements are unable to reflect the effect of such changes in purchasing power of money. As a matter of fact, the conventional financial accounts do not present the real picture of operating efficiency and financial status at a concern. Because, under the conventional accounting concept, fixed assets may be understated profit may be overstated, under charged depreciation may cripple the concern and taxes, dividends, bonus etc. may be paid out of capital, which is a clear violation of section 100 of the Companies Act, 1956, and the inventory may be unrealistically valued.

There is no way to protect a cement factory against the effect at price level changes but its consequence can be reduced through the method which would use fixed assts charges on the basis of replacement cost instead of historical costs. Thus whether depreciation charges will be based on replacement cost or not is an important accounting question. The views of accountants, economists, financial experts, industrialists and scholars can be divided into two parts i.e., for and against the price level changes.

Arguments in support of price level Changes

If the depreciation accounting is based on price level changes, then the cement produced with the help of such plant and machinery should bear depreciation charges based on price level changes. For example, suppose a cement producing plant is purchased for Rs. 4 Crore and we have to replace this plant after five years. We will have to pay Rs. 5 Crore. It means that capital represented by the cement plant is Rs. 5 Crore instead of Rs. 4 Crore. It also means replacement value of cement plant must be recovered out of the gross proceeds of cement company before that ----- cement company can be said to have made a profit. It is not enough to recover historical cost of cement plant, if in the mean time that cement plants may have lost part of its purchasing power through price level changes. They argue that it is the purchasing power originally invested that has to be recovered.

If price level changes are not taken into consideration:

(i) The real financial position and real earnings from operations would

not be brought out in annual accounts, in other words, while these annual reports might be 'true' they would not be fair to the shareholders for whom these were meant.

(ii). Dividend might some time be paid out of capital, which was against the Company's Act of India.

(iii) The Financial report at one year would not be comparable with those of another and even more important, the financial report of one unit would not be comparable with those of another.

Price level changes are helpful in the appraisal of managerial effectiveness of cement companies in terms of the preservation of current rupee equivalent to the capital invested in the business. It is helpful in the analysis of earning power of cement company in terms of current economic back drop .It is also helpful in the determination and justification of sound wage policy and negotiation with labour unions.

It is the duty of the management to match revenue and cost of the same time dimension. The only correct evaluation of the service of capital equipment in any time period should be on the basis of price level changes prevailing in that period.

A unit cannot be regarded as operating successful in a particular year unless the current flow of revenue from customers is sufficient to cover cost of materials consumed and the current cost of plant capacity consumed as well as taxes and other charges it provides a capital

attracting level of net earning for stock holders. In addition to this, it price level changes are not taken into consideration it falls into inefficiencies because of the appearance of good profit when price are rising. It price are failing the accounting treatment makes managerial effort increasingly ineffective. It can further be added that if the price level changes are not taken into consideration the result is that the best choice of products may be over looked.

Effect of price level changes of depreciation in the published accounts helps to establish a realistic price for a unit's equity capital and there by tends to reduce the danger of takeover bids. It is also an accepted convention that the cement industry should finance its own re-equipments. Therefore, unless the individual accumulated sufficient sums in its provisions for depreciation to finance re-equipment it would in any prolonged period of rising prices find it self-unable to carry on operations on the same scale or at least it would be in an unsound financial position.

Price level charge are important in planning property utilization, in making departmental comparison, in pricing policy, in determining insurable value, in setting up maintenance standards, in deciding when to retire and so on. Indeed in any period of repaid technological change and sharply moving prices, it is imperative that date of replacement cost should be available as a basis for administrative decisions. Adding to this, most lenders seek replacement of loans made to finance equipment purchases over period shorter than the estimated economic service life of the fixed assets. In other words, if current costs for consumption of fixed assets are not matched against revenues, accounting

profit will be overstated. The profit is further overstated for the recovery of other costs, such as salaries, rents etc. Besides these, depreciation and cost of materials are also made out of revenue at a lower rate i.e. at historical cost instead of higher current cost.

Price level changes are necessary for the determination of Government long range policy for the control of the economy through profits, taxation etc. It is also necessary for the determination of managerial policy with respect to pricing, credit, dividends etc. In the case of cement industry, the stockholders interest is not merely in certain amount of money but in the yield from going cement factory and this could be done with the price level changes.

\ With the help of price level change, revenue statement bears a charge for services of the fixed asset. The balance sheet is more representative of the actual state of affairs. Showing costs at current figures and sales at current value is the only logical method of calculating the results of a year's operation. Management should show clearly and precisely what has happened and it should be able to formulate policy and make plans with no misunderstanding regarding the result shown in the accounts further, the current values of the fixed assets show the true value of investment in the cement company.

Treatment of Fixed Assets under Price Level Changes: -

Generally, four methods are popular to disclose the effect of

price level charges upon fixed assets. These are stated below:

(i) Replacement cost method of dealing with fixed assets: -

The object of the replacement cost method of dealing with fixed assets is to make charges to profit and loss account to provide the amount needed to meet the cost of replacement. Considerable uncertainty is attached to the calculation required by the replacement cost method unless an asset is to be replaced with in a very short period. The replacement cost cannot be estimated with any accuracy and the method, therefore leaves wide a scope for extremes of personal opinion is determining each year the charge to be made in computing profits.

In conditions where prices continue to rise, the uncertainty of the method is emphasized because the estimated replacement cost of assets increases year by year. If each year's charges are calculated on the basis of one year's proportion of the replacement cost estimated at the time of making the calculation, then the aggregate of the amounts so provided will not be sufficient to meet the actual cost of replacement. In order to meet this difficulty, if the calculation for each year is made on a cumulative basis so as to make up the deficiency in past provisions, the effect would be to place undue burdens upon particular years. On the other hand, if the deficiency were not met well, the amounts shown as profits would not have been arrived at after providing for the replacement of fixed assets. In the letter event, the effect of applying the method would be to show the profits as

each year amounts, which are neither monetary profits nor profits after providing fully for the replacement of fixed assets.

(ii) The writing up of fixed assets: -

The writing up of fixed assets has the effect of treating the business as ceasing and starting afresh on a new basis as for the date of writing up and this is why it is in practice considered to be appropriate and desirable in certain special circumstances such as where a subsidiary is acquired and the assets are writing up to reflect the cost to the acquiring company or where subscriptions for new capital are invited on the basis of a current valuation of the assets. If fixed asset are written up the subsequent charges for depreciation will be the amount required to amortize the written up amount of the assets over their remaining life.

The figures shown, as profit for years subsequent to the writing up will therefore be arrived at after charging depreciation on amounts, which are neither the historical cost nor the estimated replacement cost of the fixed assets. If the writing up where not based on a legally established or generally accepted index there would be wide be wide scope for the factor of personal opinion in so computing depreciation charge. The method also involves an inconsistency similar to that arising under the replacement cost method. At the time of writing up, the excess of the written up amount over the historical cost of the assets concerned would be treated, in balance sheet as a capital reserve, later when the written up amount has been fully amortized by subsequent depreciation charges, the reserve could become available for distribution to proprietors although it will never have appeared as profit in the profit and loss account.

(iii) The Current value methods

The object of the current value method is to express charges for consumption of fixed assets in current values and not in terms of the monetary cost of the assets consumed.

Charges for fixed assets would not be regarded as the spreading of historical cost or as provisions for future replacement. They would be regarded as a measurement of asset consumption during the year, calculated by applying the depreciation rates to the estimated current value of the fixed assets instead of their historical cost. Broadly, the effect would be that the charges in any particular year for depreciation of fixed assets would be adjusted to approximately what they would have been. if the assets had been purchased at prices ruling in that year instead of when they were in fact purchased. Some advocates of this basis of ascertaining profit suggest that the method by which the current value of fixed assets is estimated should be that best suited to the particular type of business, for example valuation by company's engineering staff of current insurance value or price indices accounting to the year of purchase. Such a proposal serves to emphasize the dependence of the method upon personal opinion.

In a period of rising prices when current values are greater than historical cost, the depreciation charges calculated on current values would exceed depreciation calculated on historical cost and the method requires this excess to be shown in the balance sheet as a capital reserve. This would involve the inconsistency that an amount, which is treated as a deduction in computing profits, is recognized in the balance sheet as forming part of the

interest of the proprietors and could even become available for distribution to them in the event of the reserve being regarded as no longer of a capital nature. In a period of falling prices when current values are less than historical cost, the method would not be capable of application unless an additional charge were made to provide for the full amortization of capital expenditure actually incurred.

As already indicated the current value method does not purport to be a means of providing for the replacement of fixed assets. Therefore, if prices continue to rise and it were desired to accumulate the full amount required to replace fixed assets, it would be necessary to set aside additional sums over and above the depreciation charges calculated on current values. These additional sums would to treat in the profit and loss account as transfers to reserve. The total reserve shown in the balance sheet under the current value method would then be the same as that which can be achieved under existing accounting principles, but where as under existing principles, the creation of that reserve would be shown in the profit and loss account as having been made out of profits, under the current value method part of the amount taken to reserve would be treated as stated in the preceding paragraph as a charge in arriving at profits.

(iv) The index method of adjusting accounts to reflect change in the purchasing power of money

This method is not strictly a proposal for change from accounting based on historical cost; it is more in the nature of a proposal for adjusting accounts which have been prepared on the basis of historical cost. The theory of the index method is that if there has been a change in the

purchasing power of money between the time when a transaction was entered into and the date as on which the account's are prepared the currency in which the transaction took place was a currency different from that how in use and must be converted into the new currency. For the conversion process an index of purchasing power would be used.

Application of the theory underlying the index method would require an index, which represents charges in the purchasing power of money and not indices of change in the prices of particular articles. If an index of purchasing power were not used, it would be necessary to use different indices for various items in the account of any one business, this procedure would be means of applying the current value method to stock in trade and depreciation but it would not measure the effect of change in the general purchasing power of money which is the object of the index method. The view might be taken that the use of an accurate index of changes in general purchasing power is not important and that any reasonable index could enable the effects of such changes to be measured with sufficient accuracy, provided the same index were used by all business .On the other hand, prices do not move uniformly for all articles and commodities so that the application of a general index to particular business could well be inappropriate.

If it were established that the theory of a general purchasing power of money is valid and a satisfactory index could be prepared, there would remain the important question of the purchase for which the index method is to be applied. If it were used merely as a means of measuring the effects on the affairs of a business of changes in the purchasing power of

money, for the purpose of giving this information in statements supplementary to accounts prepared on the basis of historical cost, if might give information which would be of interest to the management and proprietors. If however, the index method were accepted as a means of introducing a new conception of profit, it would carry implications, which extend for beyond accounting matters.

Arguments against the Price Level Changes:

It is extremely difficult to forecast the effect of price level changes. Depreciation charges based on price level changes give no assurance of the recovery of money adequate to make replacement at such figure which will prevail at the date of replacement. If the effect of price level changes is incorporated in books of accounts it is necessary either to tax the capital gain accrued in the revalued fixed assets or to let this capital gain escape from taxation. This special type of capital gain is not realized through sales but from use of more valuable plant and machinery.

Replacement of fixed asset is an important financial policy in decision- making. It is however, different from the problems relating to fixed assets accounting. Any concept, which recognizes these two as the same thing is illogical, because it means that charges of the fixed assets are unrelated to the expiration of the usefulness of the fixed assets.

Any attempt to predict the price level changes in the future could not be more than intelligent guesswork. How can we calculate yearly

charges relating to fixed assets are on an unknown future amount? If we incorporate effect of inflation in books of account, it will involve tremendous difficulties of knowing whether or not; fixed assets will intimately be replaced in same kind. Another problem is to distinguish between in what manner replacement of fixed assets and expansion of fixed assets will be made.

In a world of fast technological changes when fixed assets is replaced, it is not likely to be replaced by an exactly the same assets. It is generally known that new asset will always be improved with new features and it will be more efficient than the predecessors. However, it is very difficult to say how much of the price of the new assets is because of the more efficiency and improvement and how much strictly for the assets in its old form. Because there is no generally accepted method of ascertaining what replacement cost should be? Secondly, it is not at all necessary that when the life of assets is over an asset of the same category should replace it. It the firm may decide to discontinue its business altogether, the question of the replacement of asset certainly does not arise and therefore there would be no such thing as replacement price. Further more; it would be a mistake to consider the financing of a new asset as the prime function of keeping records of an old asset. Expiration of the service capacity of an old asset is a matter of financial policy.

The concept of price level change fails generally because of the doubt as to the validity of subjectivity of determination of future cost and because of the steady progress in technology. The vast body of common and statutory low and legal precedent innumerable contractual and business

relationships and many regulatory provisions are presently founded on existing accounting practices. The upward movement of price have occasional an increasing general awareness of the instability of the rupee as a unit of value measure. There is no clear indication that the business, stockholders, employees and the general public either desire or can now accept it without considerable confusion and departure from historical cost.

Application of the logic of price level changes in time of depletion has created very typical problem because it would mean depreciation is charged lower and the profit would be higher and payment of profit to the shareholder in from of dividend will be also be higher. This will not be permissible in any case because such profit is not real profit and such dividend deemed out of capital.

Income tax authorities did not recognize the new assets values and will not permit depreciation to be allowed on the present day value except on strict cost basis. In the Indian Companies Act 1956, depreciation has to be charged on cost basis and any excess over the amount thus calculated was to be treated as on accumulated profit and to be shown as such. The cement units linked to charge depreciation on price level changes when price was rising, it was doubtful whether they would agree to the use of the method when prices were falling because the financial statement were prepared only on basis of cost which is likely to present a true & fair picture of the financial state of affairs of the concern. It may note that if the costs of fixed assets are being shown at cost, which is far below the present day value, the depreciation charge allowed by income tax authorities will also be low and the company would be paying higher income Tax. Companies

do not accept this. Government has also not taken care of this chronic problem.

Fixed assets accounting and effect of price level change on cement industry

For well over five decades the subject of price fluctuation in fixed assets accounting has raised doubts about the validity of the assumption that fluctuation in value of money is ignored. The most important of this basic principle now a serious challenge is the recording of fixed assets charges based on historical cost without any additional amount to cover the increased cost of replacement based on current price level.

The changing value of the rupee distorts the profit and loss account so that the reported net income ceases to be synonymous with profit. The success of the whole accounting system depends upon the truthfulness of accounting the value of money. In the field of physical measurement, the need of conversion of unlike unit to a common denomination is universally recognized. Thus, no one would dream of adding short terms and long terms or meter and yards-without conversion and in the field of financial measurement conversion is old story in measuring changes in real wages, in exports and imports, in gross national products and so on.

The capital represented by fixed asset must be recovered out of the gross proceeds from the business before that business can be said to have made a profit, And it is not enough merely to recover the same amount

of money as was spent on the original asset, if in the meantime that may have not lost part of its purchasing power through a rise in the price level. If the amount of purchasing power that was originally invested, has to be recovered.

We can divide the field of accounting in four categories, i.e., financial accounting, cost accounting, management accounting and tax accounting. One can try to judge the application of price level changes for each category. All the three cement companies under this study are following historical cost basis for tax accounting purposes. For financial accounting purposes two cement companies are charging depreciation on historical cost basis, while one company is providing depreciation on revalued figure of the fixed assets in other words, we can say that there is no such cement company in my study, which is following replacement cost principle for tax and financial accounting purposes. For cost accounting purposes A.C.C. Ltd. and Birla Corp. Ltd units are following replacement cost basis, Prism cement Ltd is following revaluation basis, For management accounting purposes Birla Corp. Ltd Prism cement Ltd are following replacement cost basis. ACC is following historical cost basis.

Table No.6.1

Basis of providing Depreciation

Basis	Units follow historical	Units follow revaluation	Units follow replacement
Tax accounting	3	-	-
Financial accounting	2	1	-
Cost accounting	-	1	2
Management accounting	1	-	2

Accounting Entry in Selected Cement Companies.

Depreciation in the various cement companies of Madhya Pradesh requires revision from time to time in the light of changes in present position, maintenance, expenditure and curtailment due to excessive use or obsolescence not allowed at the time of original estimated fixed assets. The companies Act of our country should be show amended as to enable our cement industry to revise its depreciable assets policy at least one third of their fixed assets every year. It will thus lead to revision of whole depreciable policy at least once every three year. ACC & Birla Corp. Ltd. periodically reviews their depreciable assets policy regular.

All selected Cement companies adopted straight-line method (SLM) of depreciation. The straight-line method of depreciation is very popular in financial, cost and management accounting in Cement companies of M.P. under study. The application of straight-line method is not valid for the purpose of tax accounting because written down value method is the only recognized method under Income Tax Act of India.

The management of two cement companies are of the view that excess amount of depreciation over historical cost should be charged to profit and loss appropriation account rather than be charged to profit and loss account on the ground that the additional charge to cover price changes is an unusual or exceptional item of expenditure. The associated cement companies Ltd. and Birla Corp. Ltd are of the view that an estimated amount required for replacement over the historical cost should be

transferred to the fixed asset replacement reserve account as a charge against profit. The management of the one remaining cement company. When depreciation would be provided debiting depreciation account and crediting provision for depreciation account would make the entry. When fixed assets would be scrapped or sold the allocation, which had previously been made to the revaluation reserve of these assets, would be transferred to special reserve not available for dividend.

The cement industry stands in need of rehabilitation and modernization owing to severe strains it had to face over a long period particularly during the Second World War and immediately thereafter when even well managed industries found it difficult to obtain necessary spare parts and components required for proper maintenance of plant & machinery.

The cement manufacturers association has observed that as internal resources, reserve and depreciation would not be sufficient, a major part modernization should be found by means of loans. The association had offered its opinion regarding the bases for calculating depreciation as an element of cost. It has suggested that in respect of machinery which has still some economic life left, depreciation should be calculated on the replacement cost basis and the amount required spread over the residual useful life of plant and machinery. In respect of obsolete plant and machinery the association has suggested the difference between replacement cost and the original cost must be spread over a number of years. It is recognized by the association that these suggestions may

encounter certain practical difficulties in their implementation since the various units in the country differ in respect of their equipment.

Chapter – 7

Finding and suggestions

- **Finding**
- **Suggestions**

CHAPTER - 7

Finding and Suggestion

After a through perusal of preceding chapter's it may be possible to conclude that in present economy, "Depreciation Accounting" has undoubtedly assumed a wider significance. Despite the fact that "Depreciation Accounting" is an in-separable part of financial accounting, it has become an ardent subject of discussion, debate and even of vivisection because of it's various approaches and uncircumcised field of study in relation to deferent accounting problems. In a country like India, wherein capital formation is a primary requirement for the purpose of increasing and improving nation-wide productive capacity, the issue of providing for depreciation on fixed assets becomes vitally important. The charging dimensions of technological re-valuation in the field of industrialization have also largely rendered the old techniques and process outdated leading to the problem of replacement of fixed assets of cement industry of Madhya Pradesh.

To achieve the fundamental objects of depreciation accounting, it is essential that there should be a sound planning for depreciation accounting, which requires acquaintance with the principles, methods, practices and law relating to depreciation and a decision-making capacity to select and adopt a particular mode, which may suit and prove fruitful to the cement company.

It is noteworthy that no serious attempt to have a comprehensive view of depreciation accounting has been made so far in this direction. Neither a clear concept of depreciation has been formulated, nor a

sound and suitable policy of depreciation accounting has been evolved that might be applied equally to all type of manufacturing units. Further no reliable data on the subject have been collected on the empirical basis.

It is rather difficult to examine and analyze the system of depreciation accounting prevailing in all the manufacturing industries, in India covering innumerable products and as such the present study is confined only to a particular type of industry.

FINDING:

In the introductory chapter of my thesis, the importance and the historical background of depreciation accounting is discussed in detail. It is observed that in our country depreciation was allowed as deduction in computing profits or gains from business or profession for first time under Income Tax Act, 1886; In U.K. it was allowed under the Income Tax Law in 1878, U.S.A. was about late to allow it as expenses in 1913.

The necessity of providing depreciation in financial accounts is also discussed in detail in first chapter of my research work. Significance of depreciation accounting in Indian conditions are also written in this chapter. The reasons for selecting cement industry of Madhya Pradesh, is subject matter of this research work is discussed in detail in introductory chapter of my thesis. I have given ten objectives of my study in first chapter. Meaning of 62 words relating to depreciation accounting is given in first chapter of my thesis.

Depreciation accounting and availability of capital funds is given in first chapter of my thesis. Some important approaches are written in

introductory chapter of this research work, difference between depreciation and some related terms are explained in first chapter and selection of topic is given in introductory chapter. Following units have been selected for this study.

1- ACC Ltd.

2- Prism Cement

3- Birla Corporation Ltd.

The history and development of cement industry is written in second chapter of my thesis. The conceptual framework of depreciation accounting and method of charging depreciation are discussed in third chapter of this research work. The fourth chapter details depreciation policy in cement industry in Madhya pradesh. In this chapter first of all formulation of depreciation policy is written according to accountants of selected cement companies, following are the main objective of depreciation accounting- determination of correct profit and loss, uniform rate of return, generating funds for replacements to adopt latest technology, recovery of original investments, deriving maximum tax benefits, for better repair and maintenance, recovery of original investment etc.

Formulation of depreciation assets policy is given table no. 4.2 of my-thesis. The study of this table shows that depreciable assets policy of the Birla Corp. Ltd. is affected by maximum number of factors and prism cements policy is affected by minimum number of factors.

The periodical review of depreciable assets policy is given in chapter four. The depth study of this aspect shows that only one cement company out of three companies have reviewed their fixed assets

policy periodically. Out of these only one company reviews its policy once in every 2 years, but remaining one company undertakes review on adhoc basis.

The components of depreciable assets policy are discussed in fourth chapter. It is found on personal inquiry that cement companies under study have only three important components of depreciable assets policy. These are service life of depreciable assets, scrap value of asset and dismalting cost.

Planning for depreciable assets is discussed in fourth chapter of this thesis. The table no. 4.5 shows that planning for fixed assets, covers relating to-purchase of fixed assets, use of fixed assets, financing of fixed assets, repair and maintenance of fixed assets, replacement policy, insurance policy and disposal of fixed assets. When I asked a question about the designation of this affairs who participate in planning for depreciable assets policy of their units, they replied that managing director, secretaries, engineer's and accountants are generally taking part in planning for depreciable assets as is clear from table no. 4.6. The study of this table shows that even in single case the nominee of workers participating for planning of depreciable assets.

The basis of charge of depreciation is discussed in chapter fourth. The study shows that all the units using the straight-line method and they have taken original cost as the basis of charge. (All units in conformity with requirement of companies act have made) adjustment for increases or decreases in foreign liability in respect of fixed assets cost due to devolution or revaluation. No change in the basis of charge has been made during the period under study. However, where some fixed assets have been constructed, adjustment has been made in

estimating cost of self-constructed fixed assets. Any unit did not charge depreciation on land and roads though the basis of valuation of this asset varies from one unit to another.

Replacement of depreciable assets is written in fourth chapter. Due to development at new technological revaluation increase in demand, a cement unit also requires to replace its fixed assets. Besides this, another factor like increasing in repair and maintenance; declining in the quality, obsolescence, prior inflation, etc. are some other reasons. From careful study of table no.4.8 it can be said that main reasons, for replacement of depreciable assets are repair and maintenance charges, more efficient plant and machinery in the market and decline in the quality or quantity of service, which is required in each company. Besides this the author has found at the time of interview with management of cement companies that every company makes systematic economic analysis before taking major replacement decisions. The authorities and official staff who participate in taking replacement decisions have been given in table no. 4.9.

The treatment of additions and betterments is given in table no. 4.1o. The table reveals that all selected cement companies have debited the amount of addition and betterment to original assets accounts; Methods of depreciation in actual practice are discussed in chapter four. Here, it is examine as to whether the financial accounts, methods of depreciation followed by selected cement companies under study are similar or not to those followed under other branches of accounting e.g., tax accounting, cost accounting, and management accounting. An attempt has been made to try to examine the causes for changes made in the method of depreciation during the period under

study. It is noted that straight-line method of depreciation is very much popular in the financial, cost and management accounting in the cement companies under study. The application of straight-line method is not valid for the purpose of tax accounting because written down value method is the only method recognized by Income-Tax Act of India.

In chapter fourth of this thesis an attempt has been made to find out the causes of change in the method of depreciation in the companies under study. The reasons for change over the method of depreciation as stated by the personnel employed in the concerned cement companies have been simplicity of the use, equality of charge and financial accounting considerations its seems that the management of concern cement companies have been keenly interested in finding out a suitable method of depreciation. The table no. 4.13 reveals that written down value method was replaced by the straight-line method in the case of ACC Ltd. The reason stated for this change over is writing off losses.

Selecting of unit of depreciation is discussed in chapter four of this research work. It was observed that for financial and tax accounting purpose, all the companies under study are following time unit but for management accounting purposes in case of one unit adopt different unit of depreciation as is shown in table no. 4.14.

In the fifth chapter of this thesis depreciation accounting in actual practice is discussed. When I studies annual accounts of selected cement companies, I found that except one unit, remaining units are not disclosing their fixed assets in a better and systematic way, which is clearly evident from table no. 5.1. It was observed during the course of this study that one unit maintains only plant register and remaining one

unit does not maintain any record of its fixed asset. The Associated Cement Companies Ltd. has been keeping the record in (1) register of machinery, (2) plant cost card, and (3) Equipment cost card.

The repair and maintenance policy of cement industry of Madhya Pradesh is discussed in chapter fifth. When I asked to the management of cement companies under study about their repair and maintenance policy, they replied in the same tuning that they have regular, repair and maintenance policy and they have engineer to watch of at every stage. The management of ACC Ltd. told that they have separate repairs and maintenance department and its functions to check all the fixed assets in such a way, that in week all the fixed assets can be check at least once. When I did talk in a formal way they smiled and that all the fixed assets are insured and there is no fear of any loss to negligence of repair and maintenance.

The Table No. 5.2 of chapter shows insurance policy of cement industry. The first important point is that there is no insurance for furniture and fitting in any unit under study. Building is insured at replacement cost in one unit and in rest one-units buildings is insured of original costs. Plant and machinery are insured in one unit on replacement cost. There are three type of insurance policy in regard motor vehicles i.e., comprehensive, third party and accidental. In all three companies comprehensive policy is taken for motor vehicles.

Fixed assets budget is discussed in fifth chapter of my thesis. In the present study, two units followed return on investment method and net gain method for assessing profitable of fixed assets, one unite return on investment method net gain method. Audit program for

fixed assets is discussed in fifth chapter of my research work. Fixed assets accounting and ratio analysis is also discussed in this chapter. For this purpose following ratio are calculated

- Ratio of gross fixed assets to net sales,
- Ratio of net fixed assets to net worth,
- Ratio of return on total capital employed,
- Ratio of gross blocks to funded debts,
- Ratio of net fixed assets to net profit,
- Ratio of depreciation to net sales.

In the sixth chapter, accounting for price level changes is discussed in this chapter argument in support of price level changes and argument against the price level changes are discussed.

Suggestions:

One of the important purposes of my research work is to suggest a suitable depreciation accounting policy for the cement industry in Madhya pradesh, Cement industry has a significant number of old fixed assets, which need to be modernized and replaced by up-to-date modern fixed assets. Importance of depreciation accounting in production of cement is increasing and scope of depreciation accounting is also becoming wider due to more use of sophisticated fixed assets in the production of cement. The following are the suggestions put forward in this respect.

(1) Chief object of fixed assets policy of cement industry must include determination of correct profit and loss, generating funds

for replacement, to adopt latest technology, recovery of investment; showing effect of price level changes, for better repair and maintenance policy, deriving maximum tax benefits. Factor affecting formulation of fixed assets, repair and maintenance policy, depreciation policy, obsolescence, replacement cost of fixed assets, engineering investigations; past experience and future expectations, periodical review of fixed assets, change in demand, addition and betterment and accident.

(2) The company law of India should be so amended as to enable our cement units to revise their fixed assets policy at least 1/3 of their fixed assets every year. It will thus lead to a revision of whole fixed assets of least once in every 3 years. This suggestions will greatly benefit those cement units which are old, for newly established cement units, it would be better it they revise their fixed assets policy after two or three years. It is good if fixed asset policy should be periodically renewed on the basis of statistical analysis and engineering estimates of the units experiences.

(3) It is suggested that every cement unit must estimate service life of fixed assets, scrap value of fixed assets rate of depreciation and dismal ting cost of fixed assets on technical ground so that a genuine estimate can be make. It is also suggested that following officers must participate in planning for fixed assets:

- Managing director/ General manager
- Secretary
- Chief engineer

- Chief accountant
- Factory manager
- Production manager
- Repair and maintenance managers
- Nominees of worker
- Finance officer
- Head of Department

(4) A suitable replacement policy must be formed by our central government with the help of cement-manufactures association, so that old and obsolete plant can be replaced by modern automatic plant. Every unit must the rise in the replacement cost of fixed assets in a systematic manner. Our Companies Act must be changed in such a manner, so that it will become compulsory for every unit to create a fixed assets replacement fund.

(5) After 1991, borrowing in case of cement units is preferred to finance the fixed assets against the earlier practice of using share capital for this purpose. The profitability rate of cement industry is about 4% which is very poor in comparison to other industries e.g. in case of chemical fertilizer industry the profitability is more than 20%. Thus, it is suggested that cement units use share capital for financing for fixed assets instead of borrowing.

(6) Every unit must disclose its fixed assets in a systematic manner. It is suggested that disclosure of fixed assets must be made in the following headings.

- Goodwill

- Freehold land
- Leasehold land
- Factory building
- Office building
- Building for employees welfare
- Plant
- Machinery
- Furniture and fixtures
- Motor cars
- Motor trucks
- Live stocks
- Railway siding
- Roads
- Water supply installation
- Library books
- Mines and quarries
- Hospital
- Club
- Work in progress

It is advised that every unit must disclose information about depreciation and fixed assets in a separate schedule and every unit must disclose separately the profit and loss for each disagreed or sold fixed assets in its profit and loss account. The deterred tax liability due to adoption of straight-line method should be recognized and disclose in published account. The method of providing depreciation may disclose in published account of the company

together with the amount of depreciation claim under Income Tax Act.

(7) The plant register and other schedules relating to fixed assets should be standardized as per the suggestion given in chapter IV. It is advised that every cement company should prepare and adopt plant register, table card, class record; class summary, annual general summery assets transfer order and asset retirement order.

(8) Every cement company must have its own repair and maintenance policy. My opinion, it is better to have an insurance policy based on replacement cost for building and Plant & machinery, for motor vehicles purposes a comprehensive insurance policy is suggested.

(9) Price of cement must be fixed after providing reasonable amount for replacement of fixed assets.

(10) It is good if every cement company follows present value method and pay back method for capital expenditure budget.

(11) It is suggested that auditors of the cement unit should keep. The some objectives in their mind of the time of verification of fixed assets. To check that fixed assets should be held under companies ownership; these are physically present or not and for valuation for fixed assets, auditor's must take the certificate by management. The auditors must satisfy themselves that the unit's policy of accrual; retirement, valuation and adjustment are

consistent with those of past year. The depreciation charges with those of past year and depreciation charges for them during current year are also satisfactory. They should try to encourage internal studies of useful lives and salvage value of fixed assets and rates bases and method of providing depreciation.

(12) It is suggested that every cement company must calculate and analysis following ratio to every one month interval:

- Fixed assets to net sales,
- Net fixed assets to net worth,
- Return on capital employed,
- Fixed asset to funded debts,
- Net fixed assets to net profit,
- Depreciation as percentage of sales,
- Depreciation to net profit.

(13) Companies act and Income tax act should be amended in order to allow depreciation based on straight line method, written down value method, double declining balance method and sum of the year's digit's method. A company may be allowed to adopt higher rates of depreciation, if its actual replacement justifies such a decisions. Sec.205 of the Companies Act provide two methods of depreciation for writing off fixed assets while sec 350 of the Companies Act allowed only written down value method. This discrimination must be removed.

(14) The Companies Act should provide that no company should pay dividend at the rate, Exceeding the bank rate prevailing at the end

of its relevant accounting year's, if the closing balance of free reserves falls below the excess of accumulated depreciation based on current replacement cost over the actual balance of accumulated depreciation based on historical cost.

(15) The Companies' Act and Income Tax Act must allow depreciation based on replacement cost. For this purpose chamber of commerce and cement manufacture's association must prepare an index number.

(16) A schedule, which is required to be maintained, must give information about following facts:

- Cost of fixed assets at the end of the previous year,
- Addition in fixed assets during the year.
- Deduction in fixed assets during the year,
- Replacement value of fixed assets at the end of current year,
- Cost of fixed assets at the end of current year,
- Revalued value of fixed assets at the end of current year if revaluation is done,
- Depreciation up to previous year based on historical cost,
- Depreciation for the year based on historical cost less deduction of depreciation for the disgarded fixed assets based on historical cost,
- Depreciation upto current year based on historical cost,
- Depreciation based on replacement value of fixed assets of the end of current year.

- Depreciation based on revalued value of fixed assets at the end of current year, if revaluation is done.
- Written down value of the fixed assets at the end of previous year based on historical cost.
- Written down value of the fixed assets at the end of current year based on historical cost.
- Written down value of fixed assets based on replacement cost at the end of current year.
- Written down value of fixed assets based on revalued value at the end of current year.

(17) Every unit must disclose separately profit or loss on each disgarded or sold fixed assets in profit and loss on each disgarded or sold fixed assets in profit and loss account.

(18) The deferred tax liability due to adoption of straight-line method should be recognized and disclosed in published account of cement company.

(19) Accounting for fixed assets must be prepared on group basis instead for individual items of fixed assets. These groups must be divided into sub-groups for better analysis and interpretation.

(20) Changes in fixed assets accounting should be prospective and not retrospective, because retrospective application depreciation method will affect the previous fixed assets accounting system.

(21) The statement made by the chairman and the director's report should specifically mention the financial implementation of the

changes in the replacement cost and the steps taken by the management to meet the challenges.

(22) 90% Staff members satisfy with welfare plan running by selected company.

(23) Management of selected cement companies are not satisfied with taxation of cement product because it is as high as 33.33% of its total cost.

(24) The depreciation policy, which is recently used for valuation of assets and preparing balance sheet according, schedule VI of Company Act 1956.

(25) Above licensing of levy policy, I seem to be useful for 80% member of my sample survey near by the town Mankahri where prism cement plant is situated.

(26) Depreciation accounting should be separated from financial accounting finally I conclude that.

(27) ACC Ltd. & Prism Cement Ltd. in Madhya Pradesh follows liberal policy regarding depreciation.

(28) ACC Ltd & Prism Cement Ltd. in M.P. follow uniform basis for charging depreciation.

(29) The company manager of ACC Ltd. & Prism Cement Ltd. perceived in the consistency of depreciation policy.

(30) The ACC Ltd. & Prism Cement Ltd. in M.P. follow the norms of discloser regarding depreciation accounting as suggested, Accounting Standard No. 6, by the Institute of Chartered Accounting of India.

(31) The selected cement companies do not follow the uniform method for charging depreciation in both for the purpose of external repairing & fraction.

(32) This study help to point out the influence of depreciation policy on the profit, share in the market, company, liquating cement of dividend and income tax.

If cement factories in Madhya Pradesh follow the above suggestions a correct approach to their depreciation accounting should emerge in near future.

Appendix

&

Questionnaire

Appendix No. 4.1

Plant and Mechinary Register

Name of the Department _____

Sl. No.	Supplier's Name	Description of Machinery	No. of Units	Machine No. of any	Date & No. of Invoice	Date of Receipts	Date of Installation	R.R. No & date	Invoice value contracted Price	Sales Tax
1	2	3	4	5	6	7	8	9	10	11

Packing Forwarding	Freight	Import duty	Clearing loading unloading charge	Other Incidental charges	Internal Deferred payment	Insurance Charges	Capital expenditure Incidental to installation	Total Block value	Remarks
12	13	14	15	16	17	18	19	20	21

Appendix No. 4.2

Birla Corporation Ltd.

Plant and Machinery Register

Name of Machinery :
Location :
Condition New/old :

Date received :
Date erection started :
Date installed :
Date Commissioned :

Detailed particulars	Details of the cost	Amount Rs. P	Sales and/or adjustments	Net cost	Period	Depreciation			Total
						Current year	Last Balance	Adjustment on Rules	Provieded
1	2	3	4	5	6	7	8	9	10

W.D.V.	Development rebate claimed	Amount transferred to development rebate Reserve
11	12	13

Appendix No. 4.3

Prism Cement

Plant Register

Store entry date	Name of Machine	Total No. of machine	Name and address of suppliers	Rate per machine	Total invoice	C.S.T.	Packing	Freight	Control	Miscell aneous charges	Total	Value per units
1	2	3	4	5	6	7	8	9	10	11	12	13

Appendix No. 4.4

Prism Cement

Voucher No. Date	Particulars			Description	Amount	F.O.B. cost at purchase centre	Custom duty and clearing charges	Freight and insurance charges
	Suppliers	Bill No.	H.R. folio					
1	2	3	4	5	6	7	8	9

Octrol & other charges	Cost installed machinery	Date installation	Installation Expenses		Total cost of machinery	Remarks
			Material consumed	Labour & erection expenses		
10	11	12	13	14	15	16

Appendix No. 4.5
Table Card for Fixed Assets

Fixed Asset No. _____ Model No. _____
Description _____ Location _____ Depreclation _____
Fixed assets record and relocation order _____ Mere to _____
To move equipment Complete Cards : Floor _____ Bay
Date _____

Installation date, month, year	Life year	Cost	Depreciation	Depreciated Value	Equipment	Class

Sing. Plant Engineer _____
Maintenance
Department _____

Appendix No. 4.6
Class Record

Description of fixed asset :
Length of efficient life :
Date of declaration :

Depreciation year	Year capital, out lay and subsequent annual depreciation deducted

Appendix No. 4.7

Class Summary

Depreciation of fixed assets :

Life of fixed asset :

Class No.: Rate of Depreciation_____

Year	Gross value	Depreciation	Written down value
Total			

Appendix No. 4.8

Annual General Summary

Name of fixed assets	Gross value	Depreciation	+ or - Written down value
Current Year			
Buliding			
Plant and Machinery			
Furniture & fixtures			
Motor vehicles			
Total			
Next Year			
Buliding			
Plant and Machinery			
Furniture & fixtures			
Motor vehicles			
Total			

Appendix No. 4.9

Assets Transfer Order

Number _____ Transferred from _____ Department

Received by _____ Department

Identification		Date of purchase	Description	Cost	Net value	Accumulated depreciation	Accounts			
Fixed Assets No.	Mfg.' s. No.						Name No.		Amount Debit	Credit

Required by _____ Received by _____ Date _____ Remarks _____

Approved _____ Charge accapted _____ _____

(Deptt. Head)

Approved _____ Noted on property Record _____

(Property clerk)

Appendix No. 4.10
Asset Relationship Order

Number _____ Retired from _____ Department Date _____

Identification				Cost			
Fixed Asset No.	Date of Purchase	Date of Puchase	Description	(Including additions)	Accumulated depreciation	Salvage Value	Cost of dismalting

Voucher No. or Account No.

Accounts		
	Amount	
Name No.	Dr.	Cr.

Requisitioned By _____
Approved _____
Approved _____
Noted on fixed asset Record _____

Remarks _____

Appendix No. 4.11
Suggested Form of Plant Register

Maker's Name :
Technical Description :

Maker's No. :
Invoice No. & Date :

Main Deptt Code No. :
Location :
Expected Life _____ (Years)
Method of Depreciation :
Rate of Depreciation :

Particulars and Original Cost	Amount Rs. P.	Detail of additions or (subsidiary equipments)	Amount Rs. P.	Details of Sales or Transfer	Amount Rs. P.	Details of Repairs & Maintenance Exp.	Amount Rs. P.
Invoice Price							
Other Acquisition Exp.							
Foundation							
Eractiion							
Shifting							
Belting, Etc.							
Total							

Remark on Physical Verification

Signature

Remark on Technical Review

Signature

QUESTIONNAIRE

1- Establishment year of the company ?

.....

2- What is the depreciation policy followed by the Company. ?

.....

3- Weather it is changed from last five year? Yes / No.

.....

4- If it is change please mention with of polices?

.....

5- Do you have plant register? Yes / No.

.....

6- Which method adopted to show the fixed assets & balance sheet?

.....

7- What is the situation of the gross block and net block from last five year?

1. .....
2. .....
3. .....
4. .....
5. .....

8- What are the policies of labour welfare running by your company?

.....

9- Do your production policy eco-friendly? Yes / No.

.....

10- Does the company fullfills the requirement of Accounting Standards?

.....

11- What methods used for cost reduction
please specify any five?

.....

.....

12- What are the main problems of Cement Company in the present scenario?

.....

13- What is the output of the company from last five year?

.....

14- How many states your production works going on?

.....

15- What is the process of your cement production?

.....

16- Do you have made depreciation fund for depreciable assets?

Yes / No.

.....

17- What is your organizational structure?

.....

18- What is the impact of abolish the levy policy of Government (positive or negative) (please specify any two)

.....

.....

19- What are the sources of management of working capital?

.....

20- Do you have any master plane for future growth? Yes / No.

.....

21- If yes, please summarized seal here in about 100 word.

.....

.....

.....

.....

.....

22- If No, than how you complete another cement production company.

.....

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